DOCUMENT RESUME

ED 332 004 CE 057 945

AUTHOR Ireton, Leroy, Ed.
TITLE Handbook for Adult Basic Education.
INSTITUTION Oklahoma State Dept. of Education, Oklahoma City.
PUB DATE 1 Jul 89
NOTE 88p.
PUB TYPE Guides - Non-Classroom Use (055)

EDRS PRICE MF01/PC04 Plus Postage.
DESCRIPTORS *Adult Basic Education; Adult Learning; Classroom Techniques; Enrollment; *High School Equivalency Programs; Inservice Teacher Education; Program Administration; *Program Development; Program Implementation; Student Recruitment; Teaching Guides; *Teaching Methods
IDENTIFIERS General Educational Development Tests; Oklahoma

ABSTRACT

Designed for use by adult basic education (ABE) teachers and directors, this publication presents a general overview of the major areas incorporated into the Oklahoma ABE program. Contents include a schematic diagram of ABE administration; ABE philosophy; state and federal guidelines; map of percentages of population 25 years and over with less than high school diploma; state priorities for ABE programs; local administration; adult learning centers location map; adult learning center guidelines; locations of local ABE classes; information relative to the adult education program; evidence of program effectiveness; duties of the director; funding of programs; goals of ABE teachers; and selection of ABE teachers. Other sections cover suggested competencies and needs for ABE inservice teacher training; specific criteria for evaluating the contents, organization, and format of ABE materials; suggestions for student recruitment, enrollment, and retention; teacher tips and techniques; points to ponder; suggestions on how to be a better leader; and a teacher's self-appraisal. A large section devoted to teaching techniques in reading focuses on the beginning adult reader and counseling ABE students. The final and largest section of the book is concerned with the General Educational Development (GED) test program. It includes policies of the State Board of Education for issuance of a high school equivalency certificate; teaching tips for the revised GED tests; and an assessment supplement for teachers. (YLB)

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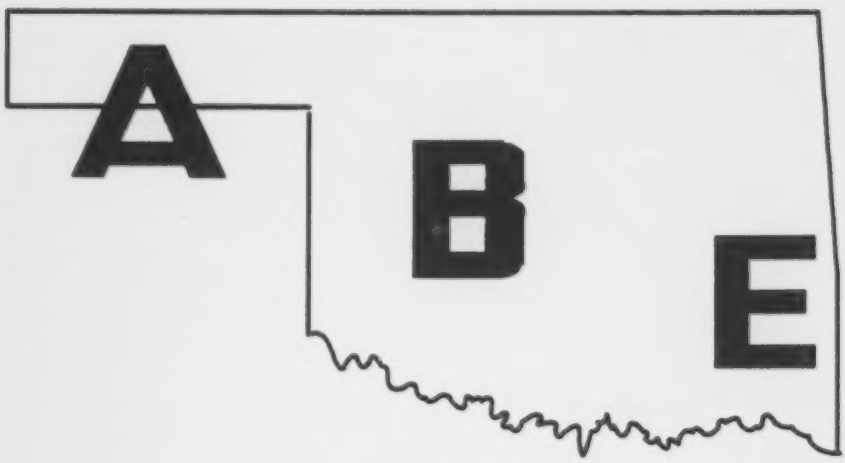

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"HANDBOOK FOR ADULT BASIC EDUCATION"

Prepared by
Adult/Community Education/Literacy Section
July 1, 1989

Edited by

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Associate Superintendent
Federal/Special Services Programs

This publication, printed by State Department of Education Printing Services, is issued by Oklahoma State Department of Education as authorized by Gerald E. Hoeltzel, State Superintendent of Public Instruction. 800 copies have been prepared at a cost of $1,137.81. Copies have been deposited with the Publications Clearinghouse of the Oklahoma Department of Libraries. August 1989

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PREFACE

This book is designed to be used for Adult Basic Education teachers and directors. This publication presents a general overview of the major areas incorporated into the Oklahoma Adult Basic Education program. Its contents should encompass many areas of interest to those who deal directly or indirectly with adult basic education.

This publication was prepared pursuant to a grant received by the Oklahoma State Department of Education from the Division of Vocational and Adult Education Programs, United States Office of Education, Department of Health, Educational, and Welfare under the Adult Education Act of 1988, P.L. 100-297 as revised. The opinion expressed herein do not necessarily reflect the position or policy of the U.S. Office of Education (USOE) and no official endorsement of the U.S. Office of Education should be inferred.

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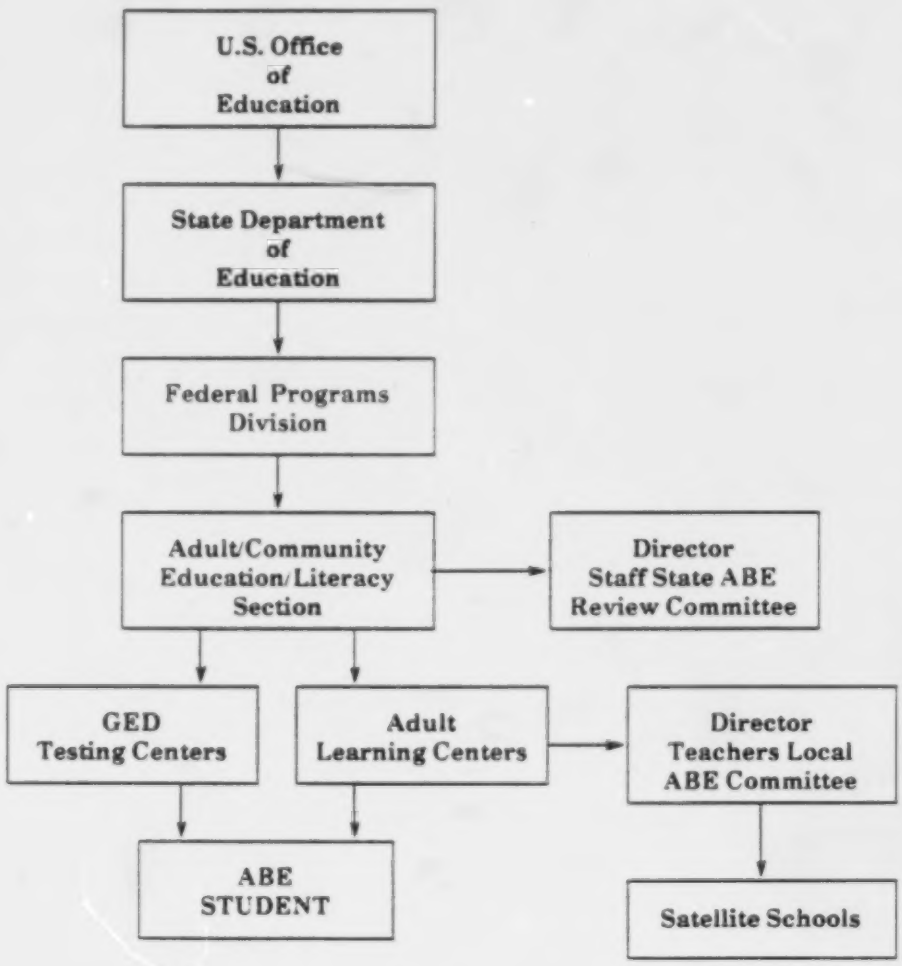
SCHEMATIC DIAGRAM OF ABE ADMINISTRATION IN OKLAHOMA



THE ABE PHILOSOPHY

"An investment in knowledge pays the best interest"

--Benjamin Franklin, *Poor Richard's Almanac*

Within the diverse field of adult education, adult basic education (ABE) addresses itself to those adults who need and desire increased knowledge and skill in basic areas of learning such as reading, writing, and computation.

Whether the adults who enroll in ABE classes have as their goals employment opportunities, earning high school equivalency certificate, learning English as a second language, interpreting recipes, comparing grocery prices, or understanding written directions; each have a need for more basic knowledge. This need, when satisfied, will in turn lead to increased self-fulfillment and improved self-esteem.

The mission of adult basic education is to provide individualized instruction for these adults so their level of education may be raised to a point commensurate with the goals they have set for themselves.

In 1988, seven hundred and three (703) persons in Oklahoma were employed as a result of having attended ABE classes. Nine hundred and eighty seven (987) were promoted or obtained a better job. One hundred and thirty (130) persons were removed form public assistance rolls. Considering that number persons were employed 40 hours per week for 52 weeks at the minimum wage scale ($3.35 per hr.) the estimated return on the investment for the first year was $4,898,504. It is reasonable to assume that many of these people were also employed in positions that paid above minimum wage scale, reflecting a greater return on the investment. This is valid evidence that Benjamin Franklin's philosophy "An investment in knowledge pays the best interest" is applicable in Oklahoma. Statistics for 1988 were cited since data for 1988 had not be collected and compiled at the time this publication went to press. It is projected that data for 1989 will reflect an increase over 1988 in all areas. This has been the yearly trend since the inception of the Oklahoma Adult Education Program in 1966.

STATE AND FEDERAL GUIDELINES

Administration of the state ABE program includes the following state and federal regulations dealing with the adult basic education student and the approval status of public school districts:

- The State Department of Education will urge the establishment of programs in areas of the state having the highest concentration of eligible students according to the latest census and from other available data.

- The SDE will monitor the establishment of classes for adults 18 years of age or older who have not successfully completed 12 years of formal schooling. Persons having attained the age of 16 or 17 will be permitted to attend ABE classes provided he/she submits a notarized joint written agreement between the school district in which he/she resides, and parent, guardian, or custodian, stating that it has been determined that such action is in the best interest of the child and community. The programs shall be implemented by approved public school systems or combinations of school districts. Public school officials shall provide adequate instructors, facilities, teaching materials and equipment necessary for achieving the purposes and objectives of the plan. The adult basic education curriculum shall be appropriate to the level of the learner and shall include concepts in health education, citizenship, and consumer education.

- The SDE and the school districts shall not require the students to pay tuition, fees, or other charges such as the purchase of books and materials.

- The SDE will recommend that school districts use professional personnel such as supervisors, counselors, and materials specialists to assist in the teaching of adult basic education classes. ABE teachers must be certified by the SDE.

- The SDE regulations do not allow for the funding of adult basic education programs related to religious or sectarian instruction.

- The SDE recommends that program officials shall cooperate with state health authorities in upgrading health conditions of eligible persons and will include in the ABE curriculum the teaching of good health practices.

- The SDE will direct program officials to maintain a cooperative working relationship with agencies and organizations and to utilize other grant money where feasible in an effort to executive the general purposes of the Adult Ed. Act.

EXTENT OF NEED FOR ABE

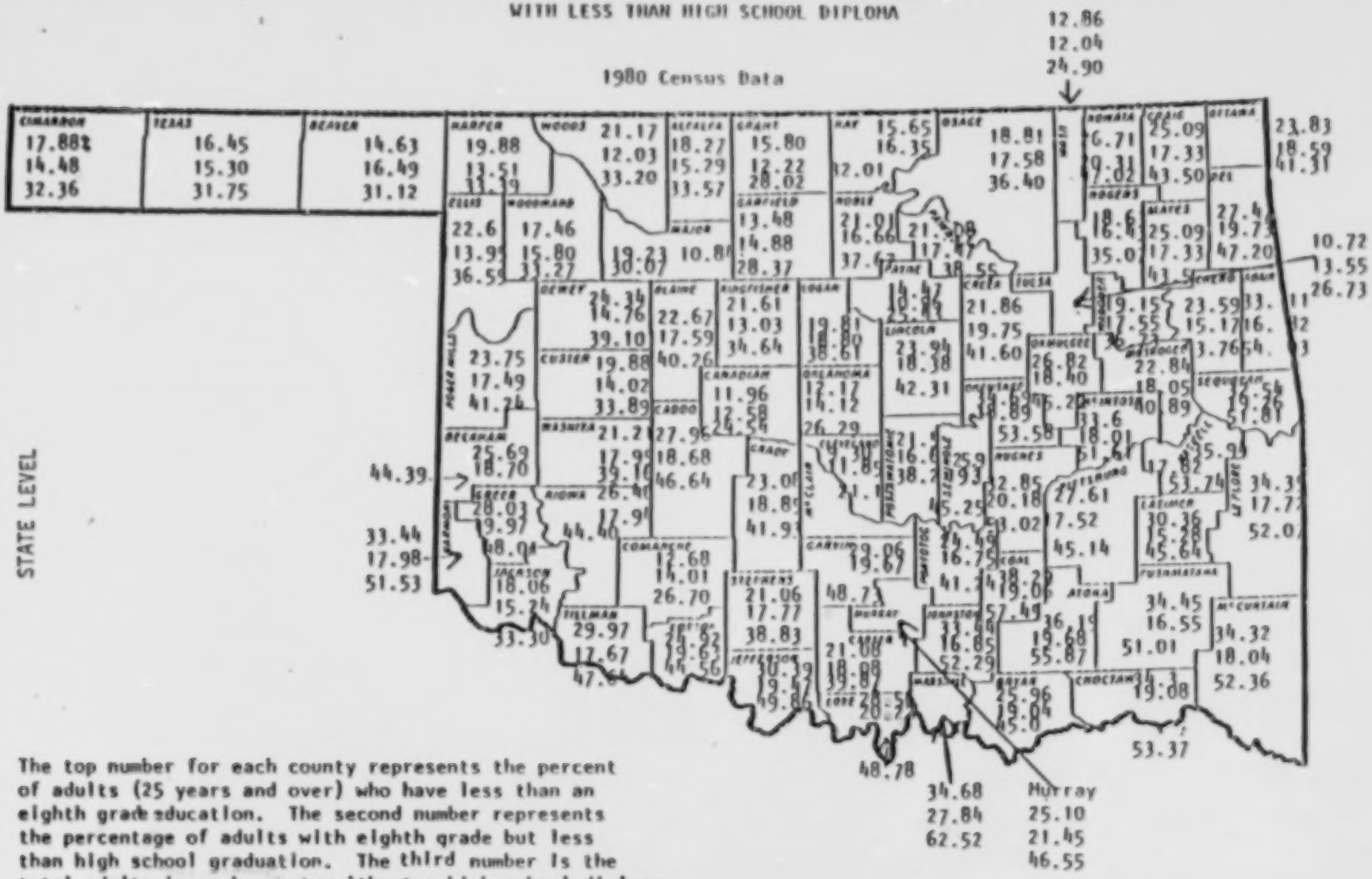
Federal Beginnings

The seriousness of the problem of illiteracy in the United States prompted the federal government to provide funds to the states early in the 1960's: the Manpower Development and Training Act of 1962; the Vocational Education Act of 1963; the Economic Opportunity Act of 1964; the Adult Education Act of 1966 and subsequent amendments to this Act.

By 1967 the U.S. Office of Education was spending $45 million yearly on adult basic education, indicating the serious intent of the U.S. government to implement programs of remedial and basic education for adults throughout the United States. Because of this educational need, the SDE established priorities in an effort to alleviate the problem of illiteracy.

PERCENTAGES OF POPULATION 25 YEARS AND OVER WITH LESS THAN HIGH SCHOOL DIPLOMA

1980 Census Data



STATE LEVEL

The top number for each county represents the percent of adults (25 years and over) who have less than an eighth grade education. The second number represents the percentage of adults with eighth grade but less than high school graduation. The third number is the total adults in each county without a high school diploma.

STATE PRIORITIES FOR ABE PROGRAMS

On the basis of assessment of local needs, available census data, and regional information, the following priorities were established and incorporated into the 1989 Oklahoma Annual Program Plan for ABE:

1. The first priority of the Oklahoma Adult Basic Education Program shall be to serve those adults in concentrated areas of low-income families having the lowest achievement in the basic fundamentals.

2. The second priority shall be to serve the same such people with achievement levels from grades 5-8.

3. The third priority shall be to serve adults from racial and ethnic minorities, bilingual, institutionalized persons, the homeless, legalized aliens, and adult Indo-Chinese refugees having a need for a command of the basic fundamentals, providing a better insight into economic, consumer, citizenship, and health problems.

4. The fourth priority shall be to serve adults who wish to qualify for the high school equivalency certificate.

Within these priority levels, projects will be designed to benefit the target population according to the greatest and most acute needs for such services. Adults enrolled in ABE classes will not be charged tuition, fees, or be required to purchase any books or materials needed for participation.

LOCAL ADMINISTRATION

At the local level the Oklahoma ABE Plan is implemented through the following forty (40) Adult Learning Centers:

Ada	Guymon	Pryor
Altus	Hugo	Sallisaw
Anadarko	Idabel	Shawnee
Ardmore	Lawton	Stigler
Bartlesville	McAlester	Stillwater
Chickasha	Muskogee	Tahlequah
Clinton	Norman	Talihina
Department of Corrections	Okmulgee	Tulsa
Drumright	Oklahoma City	Watonga
Duncan	Pauls Valley	Wewoka
Durant	Pawhuska	Wilburton
Elk City	Ponca City	Woodward
Enid	Poteau	Yukon
Guthrie		

* See locations on map next page

ADULT LEARNING CENTERS
1989-90

(1) Ada
(2) Alva
(3) Anadarko
(4) Ardmore
(5) Bartlesville
(6) Chickasha
(7) Clinton
(8) Dept of Cor
(9) Drumright
(10) Duncan
(11) Durant
(12) Elk City
(13) Enid
(14) Guthrie
(15) Guymon
(16) Hugo
(17) Idabel
(18) Lawton
(19) McAlester
(20) Muskogee
(21) Norman
(22) Oklahoma City
(23) Okmulgee
(24) Pauls Valley
(25) Pawhuska
(26) Ponca City
(27) Poteau
(28) Pryor
(29) Sallisaw
(30) Shawnee
(31) Stigler
(32) Stillwater
(33) Tahlequah
(34) Talihina
(35) Tulsa
(36) Watonga
(37) Wewoka
(38) Wilburton
(39) Woodward
(40) Yukon

[REVISED 8/89]

ADULT LEARNING CENTER GUIDELINES

Each of the approved ALC's, under the supervision of the designated director, shall be responsible for administering the local ABE program in accordance with the following guidelines:

1. ABE programs are conducted according to ALC's approved application.

2. ABE classes conform to approved class enrollment size as directed by the SDE. Satellite programs are established as needed.

3. ABE classes are designed to teach basic fundamentals to adults having the greatest educational needs.

4. ABE programs provide instructional materials, according to federal guidelines and services which are appropriate to meet the needs of the adult population.

5. ABE programs maintain test and evaluation data for upper level students and provide counseling and referral services for all participants.

6. ABE programs maintain current and up-to-date attendance records in accordance with SDE guidelines.

7. ABE programs document recruitment activities and dissemination efforts in order to inform public of availability of classes.

8. ABE programs involve teaching staff in program implementation and improvement.

9. ABE programs employ a qualified director of ALC to be responsible for administration of the program; including filing the annual statistical and financial report with the SDE-ABE Division.

LOCAL ABE CLASSES

Local ABE classes are established with two basic student goals in mind:

1. For students wanting to acquire additional basic learning skills in order to enhance their daily lives, or to improve their basic achievement levels.

2. For student wanting instruction in order to prepare for the GED (General Education Development) examination.

The ultimate goal of each adult basic education class is for the adults involved to go as far as their potential will allow. Because every adult in an ABE class is a unique individual, teachers must meet the challenge of working toward maximum educational growth with each person in an individualized curriculum. Testing, evaluation, counseling, guidance, and record-keeping are also important facets of teacher responsibility in an ABE program.

Forty (40) local education agencies were established to serve as area Adult Learning Centers for two hundred and forty eight (248) local education agencies in the state. The area Adult Learning Centers and their satellites are as follows:

Adult Learning Center	Satellites 1987-88
Ada	Allen, Byng, New Bethel, Kaluma
Altus	Frederick, Granite, Hollis, Mangum, Snyder, Tipton
Anadarko	Binger, Caddo-Kiowa Vo-Tech, Carnegie, Cement, Ft. Cobb, Lookeba-Sickles
Ardmore	Davis, Healdton, Lone Grove, Marietta, Ringling, Tishomingo
Bartlesville	Caney Valley, Copan, Nowata
Chickasha	Tuttle, Blanchard, Fletcher
Clinton	Cordell, Weatherford
Drumright	Bristow, Broken Arrow, Central Vo-Tech, Chandler, Cleveland, Cushing, Okemah, Owasso, Prague, Sapulpa, Sperry, Stroud
Duncan	Grandfield, Marlow, Velma-Alma, Walters, Waurika
Durant	Atoka, Bennington, Caney, Coalgate, Madill
Elk City	Canute, Erick, Hammon, Hobart, Sayre Jr. College, Western Vo-Tech
Enid	Alva Vo-Tech, Cherokee, Helena, Pond Creek
Guthrie	Crescent
Guymon	Beaver, Texhoma
Hugo	Ft. Towson, Grant, Nashoba, Rose Haven
Idabel	Broken Bow, Smithville, Valliant, Wright City
Lawton	Cache, Pleasant Valley, Redeeming Love Center
McAlester	Calvin, Crowder, Dustin, Eufaula, Hartshorne, Quinton
Muskogee	Checotah, Fort Gibson, Grace Episcopal Church, Haskell, Porter, Taft, Wagoner, Warner
Norman	Central State Mental Hospital, Moore-Norman Vo-Tech, Noble, Little Axe

Oklahoma City District	Eighteen (18) local satellites within the Oklahoma City School
Okmulgee	Oklahoma Technical Center, Senior Citizens Home
Pauls Valley	Byars, Lexington Prison, Lindsay, Maysville, Mid-America Vo-Tech (Wayne), Stratford, Sulphur
Pawhuska	Barnsdall, Hominy
Ponca City	Tonkawa
Poteau	Cameron, Ft. Coffee, Heavener, Spiro
Pryor	Afton, Catoosa, Chelsea, Cherokee Heights, Claremore, Colcord, Commerce, Eucha, Grove, Inola, Jay, Kenwood, Ketchum, Langley, Locust Grove, Miami, Vinita
Sallisaw	Marble City, Muldrow, Roland, Stilwell, Vian, Westville
Shawnee	Boley, Earlsboro, McLoud, Tecumseh, Wellston
Stigler	Kinta
Stillwater	Pawnee, Perkins-Tryon, Perry, Stillwater Sheltered Workshop
Tahlequah	Sheltered Workshop
Talihina	Fanshawe
Tulsa	Nineteen (19) Local Satellites within City System, Skiatook
Watonga	Fairview, Geary, Hennessey, Hinton, Kingfisher, Okarche, Seiling
Wewoka	Holdenville, Konawa, Seminole
Wilburton	Red Oak
Woodward	Ft. Supply
Yukon	Mustang, Edmond, Canadian Valley Vo-Tech, Oklahoma City Community College, Tinker Field, Moore, Eastern Oklahoma County Vo-Tech

INFORMATION RELATIVE TO THE ADULT EDUCATION PROGRAM

What is the funding source? ..... 85% Federal, 15% State

Does the State receive funding for the GED Program? ..... No

How many Adult Learning Centers are established? 40

How many teachers taught ABE classes the school year 1987-88? 536

How many GED Testing Centers are in operation? 49

What is the anticipated amount of funding in ABE for FY-89? $1,800,000.00

How are ABE classes established? When the local administrator determines the need, he requests fund for the class through the Adult Learning Center responsible for serving that area.

With what agencies are we currently involved in administering Adult Basic Education? Vocational and Technical Education; Department of Human Services; Bureau of Indian Affairs; Department of Economic and Community Affairs; JTPA; other sections in the State Department of Education; Community Education; Job Corps; Department of Corrections; State and local Library Associations; and state and local health departments; Literacy Councils.

EVIDENCE OF PROGRAM EFFECTIVENESS

Observed changes in target participants can be documented in the following General Education Performance Inventory:

15,418 completed ABE program through the eighth grade.

1,159 enrolled in another education program/training program after completing the Adult Basic Education Program.

3,386 passed GED examination (by having attended ABE classes).

88 graduated from high school after starting ABE program.

254 registered to vote for the first time.

182 became U.S. citizens.

502 obtained a better job or salary increase.

242 were removed from public assistance (welfare).

703 employed as a result of the ABE program.

In 1988 there were 18,629 adults participating the Adult Education Program through the Adult Learning Centers and their satellites. The participants by learning level were as follows:

Level 1 - 15,418 Level 2 - 3,211

The Adult Learning Centers were served by the following personnel:

State Department of Education	5
Local Administrators	40
Professional (Teachers)	536
Paraprofessional	37
Volunteers	33

DUTIES OF THE DIRECTOR

The director recommends qualified teacher who possess an up-to-date Oklahoma Teaching Certificate to the local school administration.

The director is responsible for the purchase and distribution of books and materials for each class. This should be done with the advice of the teachers.

The director is responsible for reports to the State Department of Education.

The director is responsible for keeping teachers informed of any changes in the program format.

The director acts as a public relations person between patrons, teachers, and local administrators.

The director is responsible for class monitoring and assisting teachers with any problems they may have.

The director is active in recruitment of students.

The director contacts the coordinator in his area if there is any question about the program.

The director is aware of all directive from the State Department of Education and keeps the local administrators and teachers informed.

The director solicits support from all media in the area in order to keep the public aware of the program.

The director provides inservice training to teachers prior to the beginning classes.

The director, with assistance from the teacher, is responsible for establishing classes for those students (i.e., invalids and shift workers, etc.) who are unable to attend class at the regular time.

The director is responsible for assisting teachers with the selection of appropriate evaluation tests. Upper level students are those functioning at the 8th grade level or above. Examples of standardized tests are:

ABLE	WRAT
STANFORD-BINET	TABE
SRA	CAT
Jordan Reading	Metropolitan Achievement Test

(Testing should be conducted within the 1st four class sessions and results kept on file for each student.)

The director is responsible for all record keeping of the ABE program: class records, student records, teacher rosters, annual financial report, annual performance and statistical report.

Public Relations

The director is responsible for keeping the adult program active in his area. To do this, he must sell it to the local administration, Board of Education, patrons, and teacher. The director must see that the channels of communication are kept open to all facets of the program. Success stories lead to further success.

Professional Growth

Directors should attend all workshops related to Adult Education when feasible. Information gained from these workshops should be disseminated to all teachers under the director's jurisdiction.

Directors should be members of the Oklahoma Adult Basic Education Association and should encourage all teachers to join also. Attendance at meetings of the organization should be encouraged.

Directors should attend the summer ABE teacher training workshops and mandate that all teachers attend, at least once every three years.

Monitoring

Director's should monitor classes both on a scheduled and non-scheduled basis. Monitoring should be done with an attitude of lending assistance and not of fault-finding.

Directors should always be available at the request of the teachers.

Funding of Programs

Several factors are considered in the funding of a center each year. Major considerations are (1) needs assessment, (2) prior year's activities, and (3) latest census reports in population trends.

An application must be submitted to the Adult Education Section in order to qualify for funds. This application is self-explanatory, but must be approved by the local administration and Board of Education.

Program Direction

In any organization success or failure lies in the leadership. The director is the leader and he must demonstrate his interest by being active in the program at all times. His enthusiasm and sincerity will be felt by those involved in the program. The director will dictate the success of failure of the program in his area. A person cannot sell a product without being sold on it.

The Adult Basic Education program will profit tremendously by having the support of the local school administrators as well a the support of the community. Perhaps the most difficult task for the director will be increasing the community awareness of the ABE program.

Since community support is an important avenue by which the personnel of ABE can reach the under-educated and illiterate, the director should have a well-prepared plan of approach. Knowing that civic organizations meet weekly, the director can make a point to meet the program chairperson and ask to have time to carefully explain the ABE program offered in the area. Tips on how to present the program are: (1) show the people to whom you are speaking that you believe in the program; (2) point out the value of it, not only for the individual participating in the class, but also for the community when the illiterate, under-educated become functional; and (3) be selective in what you say to a particular organization, such as Lions' Club, Ministerial Alliance, etc.

It may be that some people in the civic organization will not understand the under-educated since many of the group will be business people who are unaware of the many individuals who are nonfunctional or just barely coping in today's world. Point out that "barely coping" does not keep people employed, off welfare rolls, or out of prison. Carefully emphasize that the under-educated/illiterate are not necessarily unintelligent, but for some unfortunate reason did not attain the level of formal education that it takes to make them a productive citizen.

GOALS OF ADULT BASIC EDUCATION TEACHERS

Teaching basic skills of computation and communication so that the student may acquire the knowledge needed to function in society.

Helping the student to be more confident, to improve his self-esteem, and to make sound judgments in his role as a citizen, parent, employee and consumer.

Helping the student understand the duties, responsibilities and privileges of citizenship.

Helping the student cope with the demands of the working world so he may become employable and remain employed.

Helping the student to use his leisure time for a more satisfying life.

SELECTION OF ABE TEACHERS

The local education agencies may select the teachers they think are best qualified to teach their ABE classes. Teachers may be reimbursed at the rate of thirteen dollars ($13) per hour for teaching the adult classes, which is the minimum that a teacher may be paid. All ABE teacher must have a valid up-to-date Oklahoma teaching certificate.

The Adult Education teacher is continually seeking new methods and techniques of teaching the adult student. The dedication of the adult teacher to accomplish the education of the adult learner brought about the establishment of teacher training workshops.

All teachers of ABE students are encouraged to attend local and state workshops which are planned to meet the needs of the ABE teachers. Teachers are also encouraged to express their needs and to designate the areas they would like to have addressed in both local and state workshops. This may be done by written suggestions to their director or the state director of the ABE program.

All ABE teachers are responsible for attending at least one summer State Department of Education--Adult Basic Education teacher training workshop every three years and/or enroll in a college course related to Adult/Community Education in order to remain eligible to teach ABE classes. The site and date of the workshop and/or the course title and number should be sent to the LEA Director. The director will maintain a file as well as including this information in the annual evaluation to the State Department of Education.

It is recommended that each school superintendent designate one or more members of his staff to be responsible for the Adult Education Program.

It is further recommended that all schools cooperate with the State Adult Education Organization. (See Adult Education Bulletin of the State Department of Education, Adult/Community Education/Literacy Section, Hodge Education Building, Oklahoma City, Oklahoma 73105-4599).

SUGGESTED COMPETENCIES AND NEEDS FOR ABE INSERVICE TEACHER TRAINING

The teacher should:

Know the difference between the child and the adult as learners.

Know the principals of learning as they apply to adult students.

Know cultural and social forces that influence adult learning.

Know the unique characteristics of the adult as a learner.

Have an awareness of prior education experiences and failures.

Understand that the adult learner can learn if properly motivated and given sufficient time.

Understand that both the teacher and ABE learner have responsibility for determining instructional objectives.

Involve each learner in active rather than passive participation.

Know the importance of establishing rapport and confidence of each adult learner.

Find and develop potential talents of ABE students.

Not fear students who come from different backgrounds.

Understand the reasons for the low self-concept of ABE student.

Use appropriate criteria to select and evaluate current materials for adult learners.

Assess achievement of learning through appropriate evaluation procedures.

Organize a plan of instruction that demonstrates appropriate sequence, continuity, and integration.

Locate, interpret, and apply research and new developments to improve teacher.

Create own materials for use in teaching. Keep informed of recent curriculum that is suited to the ABE student.

Adapt prepackaged curriculum materials to the individual needs of the students.

Apply knowledge of materials as well as methods and techniques from fellow teachers to improve teaching.

Have knowledge of teaching-learning techniques appropriate for the ABE learner.

Have a command of the subject matter in the area in which one is teaching.

Know how to individualize and/or personalize instruction for the adult learner.

Help the ABE learner determine personal objectives and become a self-directed learner.

Know how to evaluate teaching effectiveness.

Understand the role and function of adult basic education at the local, state, and national levels.

Know how to involve the large unit (colleagues, supervisors, and community leaders) in adult basic education concerns.

Have knowledge of local organization or agencies that may enhance ABE program activities.

Have knowledge of the role of the local ABE supervisor.

Be able to articulate problems to supervisors.

Have knowledge of the required administrative procedures and forms.

SPECIFIC CRITERIA FOR EVALUATING THE CONTENTS, ORGANIZATION, AND FORMAT OF ABE MATERIALS

Are the goals for each lesson clear, practical, and attainable?

Does each lesson teach the presented concepts thoroughly?

Are subject matter and learning activities familiar and interesting to adults?

Does the content, whenever possible, raise the self-esteem and status of the adult student?

Do the materials motivate or encourage individual reading, speaking, writing, and other study?

Does the language used and examples given in each lesson apply to adults?

Are the skills and concepts taught in sequential, logical order?

Do the drawings, illustrations, and other graphics clarify ideas presented verbally?

Are the materials written in such a manner that the students can follow the lessons to a large extent by themselves? (They should not be too dependent on instructors.)

Do the materials have built-in measuring devices to show both quantitative and qualitative student progress?

Do the materials instruct in actual life situations, such as food, property, job, voting and civic, safety, social security, housing, homecraft, financing, etc.?

Are both rural and urban settings represented?

Are the illustrations multi-ethnic?

Are the group material selections multi-leveled with the same concept being repeated at different readability levels?

Is the readability level stated?

RECRUITMENT--ENROLLMENT--RETENTION

HOW TEACHERS PROMOTE RECRUITMENT AND ENROLLMENT

In addition to being a good teacher:

1. Flyers may be distributed to neighborhood day schools for students to take home to parents.
   Brochures may be sent to customers of local banks through their monthly statements.

2. Contact may be made with:
   a. a promotion committee
   b. adult administrators
   c. school public relation specialists
   d. PTA members
      (on PTA nights advertise by wearing a tag reading "Ask me about. . .")
   e. current adult education classes (Distribute flyers here also)

3. Educational materials may be prepared and distributed through churches, community centers, recreation centers, welfare offices, waiting rooms for jobs, social security offices, counseling and medical clinics, reading racks, and bulletin boards of industries, post office, grocery and convenience stores.

4. Teachers and administrators of local programs may appear on local TV to answer questions about the program. Questions may be accepted by telephone and relayed to the TV panel.

5. Recordings may be made and played at the local TV station periodically.

6. Newspaper articles can be written to advertise programs and to relate success stories.

7. Civic clubs can be attended to inform public about ABE program.

8. Former students can visit classes. Students can ask friends or family to attend.

9. Informal notes and questionnaires and Christmas cards can be mailed.

10. Telephone calls can be made.

11. An open-house party combining a friendly social gathering with recruitment can be held.

12. Informal gatherings at churches, housing projects, libraries, and community centers.

13. Printed materials and Adult Education programs can be represented during panel discussions.

14. Radio ads may be aired as public service announcements.

RECRUITMENT OF ABE STUDENTS

Recruitment of the adult who has not completed high school is a major concern of all the ALC's. The first priority however, is to serve those adults who have had little or no formal training.

Recruiting ABE students is difficult on a year-in, year-out basis, particularly after the "cream" is skimmed off of the target population.

Traditional recruitment methods which have been used to attract middle-class adults in the past often flop miserably with ABE students.

Getting students to enroll in ABE is not a guarantee that they will be so thrilled with the program that they will attend on a regular basis.

ABE attendance is typically sporadic in nature and is often dependent on factors not directly related to the learning transaction.

Recruitment, as well as retention, is a responsibility of the teachers, the counselor, the administrator, and the aide.

Recruiting students for ABE classes funded under provisions of the Adult Education Act is particularly difficult because of these three factors:

1. No stipend is provided in ABE classes, while other federally funded programs do provide stipends for students to attend class.

2. Federal funds cannot be used to pay transportation costs. (ABE students often have serious transportation problems if low-cost public transportation is not available.)

3. Absence of free child-care facilities prevent parents of young children from attending classes.

RECRUITMENT METHODS THAT HAVE WORKED

There is no single method that works best everywhere. Recruitment is often a result of trying as many methods as possible, realizing that they will work with varying degrees of effectiveness.

As a recruiter, try to involve people who are known and trusted in the community where the potential enrollees live. People tend to have a higher level of trust and understanding of someone who speaks the same language, or has the same color of skin, or comes from the same ethnic background as the students.

The ABE program should not hesitate to involve anyone or any group which might be of assistance in recruiting adult students.

Teachers have a primary role in recruitment. Time and opportunity should be given to the teacher so that he or she can follow up with the students in the class through:

Telephone calls
Home visitations
Letters
Postcards
Buddy system (by fellow students)
Counselor (if available, may help)

All learning centers, as well as many teacher, have received a booklet entitled *Recruitment and Retention of the Adult Learner*, published by the Alabama State Department of Education. This booklet can be helpful to each teacher through its suggested methods and techniques for recruitment and retention of the ABE student. Copies of this booklet may be obtained from the learning center director.

ORIENTATION MEETING NIGHT PROCEDURE

1. Reception of Students

   a. This is the all-important area. An air of friendliness and sincere welcome is valuable. Many of these people have not been in school in years. Let us attempt to make this occasion pleasant and memorable.

   b. Show students to the meeting room, and if possible, make them feel "at home."

   c. Encourage conversation between students in an attempt to promote an informal tone the meeting.

   d. Continue to informally control the group until appointed meeting time.

2. Meeting

   a. Begin meeting promptly at the appointed time.

   b. Welcome students and praise their interest and determination to improve educational abilities. "Simplicity and service" is the keystone of this program.

   c. Hand out an information sheet and pencil. This sheet can serve as your initial informal assessment form.

3. Class Discussion Necessary to Program

   a. What two nights each week are desirable for class work? This is entirely up to the class, as the instructor will avail himself on evenings selected. Class nights must not be consecutive.

   b. The beginning time of the class should be discussed, and every student should be encouraged to enter into the discussion. The decision as to the time for starting classes as well as that of selecting class night, class breaks, etc. will be decided by majority rule vote. (Note--This, of course, excludes areas where state and school requirements govern practices.) When a practical starting time has been selected, the problem of tardiness should be mentioned. Tardiness should be mentioned as "undesirable" and then proceed on to another matter.

c. Smoke breaks or coffee breaks must be decided at this point. Ten minutes per hour of instruction is acceptable as break time. Breaks may be arranged by any manner desired by the entire class; however, one plan must be practiced throughout the course.

d. Absence should be mentioned in a somewhat stronger vein than tardiness. Take time to point out loss of individual's time and the loss of continuity in materials and instruction. Attempt to establish and maintain high interest, and absenteeism will not be a problem.

e. Any other important matter determining class decisions or approval should be brought up at this time and completely settled. Any questions from students should be dealt with at this time. The instructor will profit by taking notes of all decision reached for future use. A time schedule will be requested from each class that will reflect instructional periods and "breaks".

4. Summary of Individual Class Decisions

a. The value of this summary of decisions and recommendations of plans cannot be over-emphasized. The manner in which this matter is conducted will be influential throughout the entire duration of this class. A business-like attitude, with concise and definite statements, will add to the feeling of security we are trying to "instill" in these students.

b. Attempt to point out that these decisions are theirs, not the instructors. Give the impression that "they" have contributed greatly to the success of the program. Make the STUDENTS the most important part of the program.

5. Closing the Meeting

a. With a well-planned organized meeting, you have covered all points of importance, discussed and received all necessary information. Dismiss the group in the same friendly and informal manner that was used to organize this meeting. We are still in a position to continue our "first impression" with these individuals.

b. The very fact that they are dismissed without any time being spent or used unwisely will gain much respect from the students.

6. At the close of the class meetings, all instructors are asked to meet with the teacher in charge and discuss the entire operation of the meeting. Comments both positive and negative should be noted and reported in a written report to the Adult Basic Education Office.

RETENTION

It is so easy for an adult to drop out of school. He doesn't HAVE to be there. No law forces him to attend. He isn't working for credit. Chances are he has no money invested in the class, only his time. Why shouldn't he leave if the class is boring or doesn't meet his needs or expectations. Wouldn't you?

If you have had a high rate of dropouts in previous classes, now is the time--at the very beginning of a new term or class-- to apply dropout prevention techniques. Steps to prevent student dropout may be taken at the very first class session. (Some adults attend the very first meeting but never come back.)

HOW TO BRING THEM BACK FOR MORE!

Prescription #1

Send students home from the first class meeting with a skill which they can use, no matter how small or simple.

Give them cliff hangers! Arouse their interest in future classes by telling them briefly about some provocative activities you have planned for future sessions--experiences that they will not want to miss.

Give them action! Too many teacher devote all or most of the first meeting to a long oration about the course. The students will like it better and you will gain valuable information about them if you start by asking each student why he is there and what he needs or hopes to get from your course. It may be necessary to divide into small groups to get instant action and reaction and to encourage shy individuals to speak up.

Prescription #2

Your secret weapon is MOTIVATION! Students will not drop out if they are highly motivated. The most disinterested person in your class was sufficiently motivated to enroll, so there must be a way to find and use that motivation. What will stimulate one student's enthusiasm will not necessarily work with another. So you have to try many different approaches:

(1) Some teachers recommend coffee breaks during class as a way of motivating adults who feel somewhat ashamed of their educational deficiencies. Much encouragement can be gained by each person when he discovers he is not alone but rather in a close group. By chatting informally with classmates and the teacher, the student finds others having the same problems, thus encouraging him to return to his studies with renewed enthusiasm and hope.

(2) Every time a student in your class performs a skill successfully, or learns a fact he can use, he is less likely to drop out; whereas continued failure is a killer of incentive. Concentrate on giving your most withdrawn, bored, or dissatisfied students the opportunities to succeed in something, however small, in every class session. Example: ask them a question to which you are reasonably sure they know the answer. Find out what jobs they hold and ask for information or advice on something related to their work. Give them their moment in the limelight. (They may never have enjoyed such an experience.)

(3) Have each student compete with himself. Students are motivated to achieve by improving their own records.

(4) There is a general feeling about the subject of history that is negative. The student wonders, "What does history have to do with me?" Here are some ways to show students what history means in their lives: (a) have them write down significant dates in their personal life such as birthdays, anniversaries, etc., and ask them to find out what major events happened on that date in history; (b) assign a discussion topic such as "One Way in Which the *Bill of Rights* Has Affected My Personal Life:" (c) ask them to make a family tree and discuss historical events which may have affected their ancestors; (d) let the class study your local city government instead of some far-off city such as New York.

(5) Keep them guessing with a variety of activities. When a student knows something DIFFERENT will happen in every class, he will be back to see and perhaps take an active part. Use tape recorders, films, guest speakers, field trips. PLEASE AVOID SESSION AFTER SESSION OF "TEACHER TALK, CLASS LISTEN."

Prescription #3

An important reason for student dropout in literacy classes is "a tendency for teachers to dehumanize instead of becoming a friend to their student," say the *UNESCO 1971 Report on World Literacy*. A warm classroom atmosphere is friendly, informal, and non-authoriatarian. This is not idle advice. It is based on sound research into the needs of adult student. The new Dropout Centers and Continuation School concentrate on smaller groups and classes and more friendly relationships between students and teachers, and therefore the holding power of these institutions is great.

Prescription #4

It's often helpful to have a personal chat with each student who shows signs of disinterest in class activities. Don't make it a formal, "behind the desk" interview. If possible, go out for coffee; maybe take two students at a time; they feel more relaxed that way. Don't start discussing the class immediately--let them talk and as they feel more and more comfortable and relaxed, lead them to discuss the class and find out what they don't like about it, or in what way you are failing to meet their needs. Offer private help, also. Even a few minutes during class time, while other students are occupied or during coffee breaks, may be all the private attention or tutoring some student need to solve the learning difficulties which may be worrying them.

Prescription #5

They may simply need to know you care. Take the class into your confidence. Tell them to realize you may not be meeting all their needs--that what you are doing may not be interesting to everyone. Explain that you need and want their criticism, and that if they would rather write their gripes, you would be glad to distribute a gripe-sheet on which they may write down their feelings. The sheet may have spaces such as "What I like best about this class;" and "What I like least about this class."

Prescription #6

Allow students to use educational books and materials only in the classroom for the first 3-4 sessions. After the fourth class, allow students to take **one** book home. Many times the adults hear that ABE classes will distribute free books on the first night of class. Consequently, the adults attend only the first night, take their free books and you never see them again. By waiting until the fourth night of class to receive a book, the students may be more inclined to return for class.

TEACHING TIPS AND TECHNIQUES

The Psychology of Learning

1. Basic Principals

   a. Students do not learn as a result of what teachers do, but what the teacher gets them to do. It is important that the student understand this because learning is a behavior change in the individual.

   b. Changes do not become a part of a person until they are used. The student must be involved in the process of learning.

2. Motivations Key

   a. Motivation is the most basic element of learning; it makes the student want to know, to understand, to believe, to act, and to gain skills.

   b. The teacher must recognize the importance of motivational factors in the process of learning.

   c. Motivational factors include: the need for security, practical and usable experiences, personal recognition, self-esteem, conformity, and the need to help others.

   d. Goals are deceptive. The student may set a goal opposite or different than the goal the instructor sets. This is why it is important to adopt a policy of teacher-student planning in selecting goals. Each should know what is expected of him. In adult education, the student always sets his own goals.

3. Learning is Action

   a. The teacher should discover that the student needs are; and which needs can be met as a result of outside assignment.

   b. The teacher helps the student think through: why he should know the subject, and how and when he can use it.

4. Outside Assignments Should Include:

   a. Lesson objectives.

   b. Importance of assignment to student.

   c. Key questions and statements.

   d. Expectations of teacher from outside assignment (what the student is expected to know and/or do).

5. Individual Differences

   a. The teacher must recognize individual differences if learning is to be a living (active) process. No two people learn at the same rate.

b. Student discussion--After lecture, some get one main fact, others get all. Discussions may help the teacher determine why this difference exists.

c. Private conference--The teacher should get to know students as individuals. Learning differences and personal problems can be discussed. This may help in adjusting course material and requirements to meet students' needs and goals.

6. Psychological Laws

a. There are basic laws which control the learning process. The teacher must understand these laws to achieve a real measure of success in teaching and to make learning experiences more effective, lasting and enjoyable for students.

b. The Law of Effect

(1) Students realize they are learning; therefore, they are willing to return each night to school.

(2) Students want to enroll in more classes.

(3) Students must obtain personal satisfaction from each learning activity.

(4) Students should master some new idea or achieve some success each class period.

c. Law of Primacy

(1) First impressions are the most lasting.

(2) Teachers should arouse interest and create sense of need for the subject matter.

(3) Teachers should encourage students to learn it right the first time.

d. Law of Exercise

(1) Students should repeat procedures.

(2) Students should practice correctly.

e. Law of Disuse

(1) A skill or knowledge not used will be lost or forgotten.

(2) Repetition is necessary for reinforcing gained knowledge of skills.

(3) The period immediately following learning best for reinforcement.

f. Law of Intensity

The teacher should:

(1) Make experiences vivid, dramatic, exciting; these are more likely to be remembered.

(2) The teacher should make the subjects come alive for the students.

g. Blocks to Learning

(1) Psychological laws plus feelings, emotions, and attitudes may be blocks.

(2) The following blocks can be controlled by the teacher.

(a) Boredom--Work too easy or too hard.
Motivation low.
(b) Confusion--Over complex material or ideas.
Fails to relate one step to another.
(c) Irritation--Instructor's annoying mannerisms.
Poor human relations.
Interruptions and delays
(d) Fear--Failure of getting hurt.

h. Human Relations

(1) The teacher should be able to recognize the following behaviors and emotions in the adult student:

(a) Projection--finding blame for weakness.
(b) Rationalization--finding explanation which sounds reasonable but no real basis.
(c) Aggressiveness--anger, loudness, discourtesy, contempt.
(d) Flight--finding an excuse to stay away from class.
(e) Resignation--shows little or no interest in class.

(2) Teacher may help in the following ways:

(a) Help students set reasonable goals which they can achieve.
(b) Help student work out their problems. Be understanding.
(c) Keep students informed. Share the plan of the entire course of instruction.
(d) Encourage students to share how they feel about the teaching methods, instructional materials, etc.

i. Student Expectations

(1) Expects teacher to do her job.

(2) Wants to be instructed simply and directly.

(3) Expects patience and understanding. Looks to the teacher for friendship and confidence.

j. How to criticize and not make enemies

(1) It is sometimes necessary to tell students they need to pay closer attention. The teacher might follow these suggestions when offering constructive criticism:

(a) Do not criticize in front of others.
(b) Remember to smile.
(c) Find something to praise first.
(d) Appeal to the student's self-interest.
(e) Inquire gently why the person made the mistake.

(2) Be moderate with your criticism, and remember to give the student a pat on the back. Leave the door open for a desire to improve.

k. Reminders for ABE teachers:

(1) Adapt teaching methods and materials to meet the student's needs.

(2) Maintain a high level of interest in the class. (Vary method, guest speaker, plan special reports, etc.)

(3) Give attention to the safety of the student. (Know where exits are.)

(4) Plan interesting and helpful activities for the full class period.

(5) Handle subject matter with adeptness. (Organize in short units.) Student wants to see progress.

(6) Make education a mutual aim. Student/teacher planning insures student satisfaction. This gives them a sense of belonging.

(7) Tie in class work with his employment needs.

(8) Listen understandingly to student's problems. Lend assistance when the need is shown.

l. Typical Adults Want to See:

(1) Immediate benefit from the course.

(2) Enjoyable class participation in class activity.

(3) Course work applicable to their daily needs.

(4) Subject matter that can be adapted to their objectives.

(5) Practical usable knowledge.

(6) Encouragement and praise for a job well done.

POINTS TO PONDER

1. The ABE teacher takes into account the past negative school experiences, remoteness of past schooling and the self doubts of adults, in order to provide encouragement and experiences of success for the adult student. This can be done by discussing with the class the facts about the ability of adults to learn, or by giving a short review test in the subject, making it simple enough that most any student would get several "right" answers.

2. The ABE teacher takes into account the relationship between a pleasant social atmosphere and a satisfying educational experience. When an adult leaves his family fireside, he faces the psychological barriers of entering a building customarily used by children, and facing a room filled with strangers. It may be "an adventure into loneliness." But if he is greeted cheerfully by his teacher, introduced to fellow classmates, and meets other adults with similar problems, all of this will change. A warm social atmosphere will rid him of the feeling of isolation, bolster his ego, help him to maintain his personal identity, and assist him in achieving a meaningful learning experience.

3. The ABE teacher takes into account not only the adult's need for an early experience of success, but the need for recurring experiences of success. Adults should be able to relate the results of each class period to the goals they wish to achieve. At the end of each class experience, the adult should be able to say to himself: "I'm making progress!"

4. The ABE teacher takes into account that the adult student may experience a loss of speed in performance in academic activity during his mature years. The activities of the groups should be paced rapidly enough to be challenging but not to be frustrating. Relatedly, since adults may read more slowly and have less time for reading, outside assignments should be selected so as to be most central to the adult's individual goals for the course.

5. The ABE teacher recognizes the validity of the principles of involvement. When students do something or say something in their own words, it will have more meaning than if said or done by another person. Therefore, the more students can share in determining the class activities, the more they are likely to feel a personal commitment to the success of these goals and activities.

6. The ABE teacher recognizes that the adult students can serve as excellent resource teachers. Each class or group of adults is characterized by a variety of talents and experiences. It is the responsibility of the teacher to study the backgrounds of each member of the group so as to utilize, to the maximum degree, the talents of each member for the benefit of the group as a whole.

7. The ABE teacher recognizes the concreteness and immediacy of most adult's goals. As a rule, adults appreciate applied knowledge and concrete illustrations rather than detailed statements of theory. Theory should be applied through the inductive method where it is based on generalizations drawn from practical situations.

8. The ABE teacher takes into account the key role of motivation in the learning process. Adults should want to learn. It is safe to assume that when adults come to class, they do want to learn. But sometimes adults are discouraged by the gap between what they know and what they want to know. The teacher should help the student to see that learning is a step-by-step process, rather than something to be accomplished all at once. The teacher can help the students to analyze their goals and abilities realistically so that they are stimulated to achieve and succeed.

9. The ABE teacher recognizes physical and mental fatigue as a deterring factor in adult learning. Most adults attend class in the evening or late afternoon after they have done a full day's work and commuted some distance. By presenting the material in a dramatic fashion, by using audiovisual materials, and by changing the pace frequently, the teacher can offset the effects of fatigue and help keep a high level of interest in the subject.

10. The ABE teacher recognizes each teaching experience as opportunity for professional growth. Good teachers often learn more in a course than their students. The sincere teacher, in urging the growth of others, will enhance his own opportunity for growth.

HOW TO BE A BETTER LEADER

Whether you are an authoritarian or a relaxed teacher, you are the leader of the group. Even the most permissive teacher of adults tries to keep the group moving toward its goal. Do you wonder why things sometimes get slowed down or why some members of the group appear alienated or seem to be unenthusiastic learners? Do you feel ill at ease when forced to point out student errors?

Ask yourself the following questions:

--Am I realistic about my own abilities and limitations?
--Do I have the ability to arouse allegiance in others?
--Do I identify with the group which I'm leading?
--Am I willing to work harder than most people?
--Can I analyze verbally?
--Can I speak clearly and to the point?
--Can I make suggestions in a pleasant manner?
--Am I sensitive to the needs and desires of the group?
--Can I verbalize those needs in the type of language with which the group can identify?

The above questions are the basic characteristics of a good leader.

Whenever possible, delegate responsibility to group members and solicit ideas from them for decisions affecting the group. This method may take longer, and may not be as efficient as the more direct approach, but research has shown it to be more satisfying to all concerned.

When you are in a group discussion, try to reserve your suggestions and judgments until you have asked for and listened to those of the other members.

Visit the classrooms of those teachers whom you particularly admire, and observe their methods and techniques. One of the most important techniques of a good leader is to observe others, not passively, but with a sincere desire to learn why they are successful or unsuccessful in their attempts to communicate.

Don't forget that as a leader, you are often called upon to play different roles. Sometimes you must be the "neutral coordinator," just another member of the discussion group on the same level as the other members. At other times you play the role of "pacemaker," "counselor," "referee," "persuader," "information-provider," or "interpreter." Each role demands different skills and techniques.

Try to avoid giving students the impression that you are superior to them. The average individual realizes that there are others who may be superior in wealth, intellect, power, etc., but he may not like to be reminded of this fact. When you communicate an attitude of superiority, your students are likely to see you as unwilling to enter into a cooperative problem-solving relationship with them.

What are the advantages of group decisions?

--More resource information is available on which to base a wise decision.
--Experiences and recommended solutions can be compared.
--Motivation is enhanced through the team spirit approach.
--The students are usually more willing to live with a decision in which they had a voice.
--Responsibility for the decision can be shared among members of the group.

A TEACHER'S SELF-APPRAISAL

Atmosphere for Learning

--Do I know the names of my students?
--Do my students experience a feeling of being welcome?
--Is there a genuine feeling of cooperation between teacher and student?
--Is the classroom attractive, well-lighted and comfortable?
--Are the students properly grouped according to learning levels?
--Am I constantly alert to any necessity for regrouping students?
--Do I keep all the student busy all of the time?
--Do I create an atmosphere that "we are going to learn something worthwhile?"

Image of the Teacher

--Am I interested in each student's needs and responses?
--Do I speak clearly and distinctly?
--Do I smile?
--Do I earn the respect of my students?
--Do I make learning an exciting experience?
--Am I on time for my classes?
--Do I radiate enthusiasm?
--Do I really enjoy teaching adults?
--How do I endeavor to make myself a more effective teacher?

Teaching Procedures

--Do I prepare a detailed lesson plan for each lesson?
--Do I provide special lesson materials to meet individual learning differences?
--Am I versatile in the use of teaching devices?
--Do I make full use of instructional aids?
--Is imagination exercised in developing lesson materials?
--Is there an element of surprise in every lesson?

Psychology of Approach

--Do I treat my students as adults?
--What efforts do I make to motivate the student's learning?
--Is three-way communication encouraged? (teacher-student; student-teacher; student-student)
--Do I develop an attitude of supportiveness in the learning process?
--Do the students share in identifying and developing goals?
--Do I utilize every opportunity to praise and commend students?

Student Retention

--What percentage of the active enrollment is present at each session?
--What percentage of students who originally registered is reflected in the present active enrollment?
--Do I know why students have dropped out?
--Do I follow up absentees?
--What methods do I use to stimulate attendance?
--Do I recognize and try to overcome danger signals of potential drop-outs?

THE BEGINNING ADULT READER

QUESTIONS ADDRESSED

1. How can you tell if an adult is a beginning reader?
2. What is important for a beginning reader to know?
3. What are some techniques used in teaching and beginning reader?
4. What is an example of a teaching strategy used to teach the adult reader?

HOW CAN YOU TELL IF AN ADULT IS A BEGINNING READER?

Simply asking a student during the first night of instruction whether or not he or she can read may not provide accurate information to the instructor. Good follow-up questions if the response is "no" would be:

1. Do you not read at all?
2. Nothing?
3. Have you ever read?

Good follow-up questions if the response is "yes" would be:

1. What do you read?
2. Do you like to read?
3. How often do you read?

If the instructor feels that the learner is really a non-reader or beginning reader, a graded word list (La Pray and Ross, 1969) may be given to confirm the teacher's judgment regarding the reading ability for the adult.

In summary, a brief interview and the use of a graded word list could help the instructor make a decision about the actual reading level of a learner.

WHAT IS IMPORTANT FOR A BEGINNING LEARNER TO KNOW?

It is important for beginning adult readers to be highly motivated, to have command of oral language skills into the language he/she is to read, to begin initial reading instruction with materials that match his/her background, to recognize that to the symbols represent a meaningful communication system, to receive lots of positive feedback, to establish realistic goals for his/her progress, and to follow through with plenty of practice.

WHAT ARE SOME TECHNIQUES USED IN TEACHING THE BEGINNING ADULT READER?

There are four main strategies that are used in teaching beginning reading. One is the language experience approach. The steps are listed below:

1. Engage student in conversation about an event, his daily schedule, etc.

2. Record (write down) the learners main points. Initially, keep the stories brief (4 or 5 lines).
3. If time permits, type the story. If not, record the story on the chalkboard or in a notebook. An example might be as follows:

   My name is Jose Martinez.
   I am a factory worker
   I work at Johnson, Inc.
   I live in Dallas, Texas

4. Reread the story to the student.

5. Then let the adult read to you.

6. Let this story lead into other activities--application of word attack skills to unknown words such as: phonics, structural analysis, context clues, etc.

7. Cut story into sentence strips, then ask student to rearrange sentences to recreate story for additional comprehension practice.

8. Start a sight word list, a vocabulary list, and a spelling list.

9. Use words to write a new story. Create crossword puzzles, bingo games, etc., to reinforce the new words.

10. Keep a notebook of stories. Date them so student can see progress. If student are comfortable with the idea, begin using their stories for material in the classroom.

Echoing is another technique. The teacher models reading for the student. The teacher reads a sentence or other meaningful segments of prose, the student repeats or "echoes" the teacher's reading, the teacher reads the next section, the student repeats, etc.

Neurological impress is another technique. The Neurological Impress Method (NIM) is a procedure which calls for a multi-sensory approach to reading. It an be employed in a one-to-one relationship or a group.

The individual method consists of the instructor and the students meeting to orally read a selection together. Initially, the instructor may want to read in a louder voice and slightly faster pace than the learner. In the first few reading sessions, the paragraphs or sentences are repeated several times until a normal, fluid reading pattern is established.

During the reading the instructor moves his or her finger simultaneously under the spoken words at precisely the same speed and with the same flow as the verbal reading. (Heckelman, 1974). As the learner becomes more proficient, he or she can point to the words. This technique is a valuable technique for bridging the gap between spoken language and reading text.

A fourth and, unfortunately, often used strategy is to begin reading instruction by teaching only phonics.

Teachers who emphasize only phonics or other word recognition strategies without addressing comprehension may find they teach adults to be "word barkers" and not readers. Many students who receive a heavy emphasis of instruction in pronunciation but very little emphasis on reading and understanding sentences and paragraphs are likely to become "word barkers."

We believe it is more effective to teach phonics, generalization and other word recognition strategies: through the use of words which learners already recognize in meaningful contexts. These words could come from learners' language experience stories. See suggestion 5 under language experience in this section.

WHAT IS AN EXAMPLE OF A TEACHING STRATEGY USED TO TEACH THE ADULT READER?

The following outline addresses a strategy for teaching an individual to learn to read. It can be adapted to use with 5-10 students at a time. It is important to note the sessions are not meant to denote a structured time sequence. The first session may take 15 minutes for some students and 2 hours for others. One session might conceivably last several days or a month.

First Session

I. Conduct informal assessment

   A. Conduct interview
   B. Use word list
   C. Have students read selections to confirm your guess

II. Teach learner to read

   A. Use language experience approach
      An example would be as follows:

      My name is Jane Rhodes.
      I have three children.
      Their names are Gwen, Robin, and Phillip
      My husband's name is Robert.

   B. Use neurological impress method
   C. Use echoing technique
   D. Discuss selection
   E. Add to initial story if time permits
   F. Date story
   G. Introduce a few letters of the alphabet
   H. Encourage the learner to take the selection home to practice

Second Session

I. Review reading material

   A. Check for retention of story and alphabet learned (make notes of what has been retained)
   B. Practice story if learner had difficulty reading it the first time

C. Make flash cards or a lit of words form the story
An example is listed below:

My	is
Jane	three
Gwen	children
Robert	I
Gwen	have
names	are
their	Robin
husband's	Rhodes

D. Let student attempt to pronounce words in isolation
E. Teach a few letters from the alphabet
F. Note any words student has problems decoding
G. Review words missed
H. If student is not weary, continue word practice in isolation
I. Reread the story

II. Introduce new text

A. Add to present selection or begin new one
Example of another story by same student:

> I enjoy taking walks with my family in the evenings. I like visiting friends. I especially want to learn to read because my children can read. I do not want them to know I can't read.

B. Use neurological impress and echoing techniques
C. Discuss new selection
D. Date story

III. Practice new words

A. Make word list from additional selection
B. Encourage students to practice selections and word list at home
C. If they can write, let them practice writing the story
D. Examine information you have collected
E. Write brief notes of observations made of student's performance

Third Session

I. Review reading materials

A. Have student read two stories from previous session (note errors made)
B. Have learner read all previous words (be sure to change order)--observe performance and note errors made
C. Begin to take notice of student's progress in learning words in isolation and in context
D. If learner is missing words in story, encourage him/her to use context by asking "what would make sense?"

II. Introduce new text

A. Add to present story or write another selection

I like to watch television. My favorite show is Dallas. I guess I like it because it is like a soap opera. I don't have much time any more to watch *Phil Donahue* and *As the World Turns*.

B. Practice reading it as before

III. Review new words in isolation

A. Note new words
B. Add to word list

IV. Assess progress

A. Notice how well learner retains new words
B. Notice if learner possesses any decoding skills (which ones)
C. Notice if learner pays attention to all word parts

V. Begin skill practice when student has good command of 50-75 words in isolation

A. Practice comprehension skills

1. If time permits, rearrange words into new sentences for

Robin enjoys friends.
Robin enjoys television.
Gwen enjoys television in the evenings.
My husband likes Dallas.

2. Begin to scramble words and let learner compose sentences

during don't I read the day
I don't read during the day.
want to I read Robert to
I want to read to Robert.

3. Discuss selection

B. Practice word recognition skills

1. Use phonics approach
   a. Synthetic phonics--students use their knowledge of sound/symbol relationships to synthesize the sound or piece the sounds together to form a word

N O T = NOT

A S = AS

B U T = BUT

b. **Analytic phonics--students analyze a given set of words and learn sound/symbol relationships by making generalizations about similarities observed in several words.**

Example: Read these four words and determine what sound they have in common

SHOW	SHOP
SHOE	SHERRI

Generalization: The letters sh represent the sound sh

Example: Same directions

MUCH
WATCH
CHILDREN

Generalization: The letters ch represent the sound ch

Example: Same directions

GWEN	JANE
CHILREN	CLAY
ROBIN	

Generalization: Some sounds are spelled in more than one way. Both A - E and ay represent the sound a

c. Linguistic phonics--the student is asked to read through words with similar patterns. Emphasis is placed on the student discriminating initial and final consonant sounds or vowel patterns when beginnings and endings are different.

Example:

name	shame
came	frame
same	lame
fame	tame

Example:

not	cot
tot	shot
rot	trot
lot	

2. Use structural analysis
3. Use context clues

C. Introduce new vocabulary words

1. Use sentences from stories and substitute synonyms
2. Use context clues to figure out meanings of new words

Fourth Session

I. Review previous materials

   A. Reread stories
   B. Review isolated words that learner has had difficulty pronouncing

II. Teach more reading skills

   A. Continue writing language experience stories or read other adults' selections
   B. Continue use of word list
   C. Continue practicing word recognition skills that are needed
   D. Teach more letters
   E. Continue comprehension and vocabulary lessons
   F. Use Dolch Sight Word List to introduce new sight words (introduce within context)

III. Assess student's progress

   A. Notice retention of words read in isolation as opposed to context
   B. Notice progress in word recognition skills
   C. Notice amount of practice needed for skills

IV. Provide feedback to student
   A. Conduct interview
   B. Initiate records, charts, graphs, lists to illustrate progress if not already started

Fifth Session

I. Continue to use individual language experience stories, group language experience stories, exchange of personal stories, and recorded conversations until you feel that adult learner is ready to transfer to written text (both narrative and nonfiction)

II. Could make the transition easier by reading and tape recording the initial selections

III. Check to see that the following occurs for each story

   A. Student is motivated
      1. Teaching role
      2. Self

   B. Student is given or seeks background information for story
      1. SQ3R (Study, Question, Read, Recite, and Review)
      2. Review vocabulary and concepts
      3. Discussion

   C. Read selection

      1. Read silently
      2. Read orally only if it is volunteered or for student to clarify a point

D. Check to see if student understood what was read

1. Discussion
2. Questioning

a. Literal
b. Inferential
c. Critical

E. Follow up reading with other readings or an activity

IV. Continue to explore what is needed in word recognition skills, comprehension, concept and vocabulary development, background information, and motivational strategies--teach to their needs.

V. Continue to offer materials related to interests and job needs--concentrate on "MEANING"

SOME GENERAL SUGGESTIONS FOR TEACHING READING

I. A good summary statement of suggestions to follow when teaching reading is listed below:

A. Skip teaching "rules for reading." There are no rules simple and accurate enough to help anyone learn to read.

B. Skip teaching phonics rules. Meaning has to be grasped before phonics rules can be applied. How do we know how to pronounce "read" until we grasp whether it is present or past? How do we know if it is a noun or a verb?

C. Teach letters as part of words, and words as part of sentences. That is how language works.

D. Settle for sensible reading without worrying about word-perfect performance. Fluent readers read meanings, not words.

E. Encourage intelligent guessing. Reading fast is easier than reading slow.

F. Let readers make mistakes without penalty. We learn by our mistakes and need freedom to make them.

G. Let the context provide feedback. If the reader is reading for meaning she/he may correct his/her own miscues. Hold back on your feedback. Let the reader help him/herself and grow strong.

H. Don't worry about correcting eye movements. The problem is most likely behind the eyeball anyway.

I. Wait a long time before identifying a student as a "problem reader." You or the system may be the real problem.

J. Encourage self-confidence and enjoyment. Reading is not learned competitively.

K. Focus on the adult, not on the method of teaching reading. With help and encouragement adults will teach themselves to read. (Malstrom, 1975)

II. Use the 20 suggestions from Bowren and Zitz (1977), Teaching Reading to the ABE Students, to teach word analysis.

III. Initially teach student the following strategy for word attack:

Q: "What word would make sense in this sentence and/or paragraph?"
A: "Don't know."

Q: "What word would make sense and begins with the '_____' sound?
A: "Don't know."

Q: "What word would make sense and begins with the '_____' sound and ends with the '_____' sound?"
A: "Don't know."

Q: "What word would make sense and begins with the '_____' sound and ends with the '_____' sound and has the long '_____' sound in the middle?"

IV. To teach vocabulary, follow the strategy listed below:

A. Teach words relevant to the adult's life

B. Always introduce new words within the context of a sentence or paragraph.

C. Make sure adult learner understand concepts represented by the symbols (relate new word to other words that s/he knows)

D. Encourage adult to practice pronunciation, instant recognition, and spelling words in isolation and in context, but apply new word in new sentence (teacher can provide sentence or student can)

E. Encourage use of new word in all aspects of language--reading, speaking, writing, and listening.

V. The following brief outline summarizes the major steps involved in teaching a beginning adult reader:

A. Assess where he/she is

1. Interview
2. Record important information
3. Assess comprehension

a. Informal reading inventories
b. Observation of his/her performance in materials
c. Close tests

4. Administer tests as needed

a. San Diego Quick Assessment or other word list to determine his/her vocabulary strength and/or word recognition strengths
b. Functional word lists on market
c. Other standardized tests or informal test as needed

B. Based on learner's strengths, weaknesses, and interests; design instructional strategies

1. Use language experience stories

2. Use neurological impress (read aloud with student a fraction of a second behind him/her)

3. Use echoing (read a sentence or other meaningful segments of prose, student repeats, you read another sentence, he repeats, etc.)

4. Use functional word list--introduce words in sentence first, then in isolation

5. Use games such as bingo with words instead of numbers or crossword puzzles to reinforce learning of new words

6. Use newspapers, comic books, pamphlets, restaurant menus, application forms, etc, for practice

7. Make entire process meaningful and relevant to adult

8. Avoid teaching word-attack skills in isolation. Do not make them your "ENDS" in instruction. They should be your "MEANS" to the "END" of reading and understanding what is read

9. Give him/her materials that contain passages to read

10. Have plenty of discussion over things he/she reads or before he/she reads on a topic. The reader will only be able to read as well as he/she thinks. The instructor needs to make sure she/he is familiar with content of reading material.

COUNSELING ABE STUDENTS

1. Encourage and believe in your student's success, inside and/or outside the class. The difference between success and another failure may be influenced by your attitude.

2. Accentuate the positive, show faith in the students abilities

3. Recognize the adult as an individual with attitudes, values, and goals that are different from yours.

4. Do no pass judgment on the student's lifestyle. Accept him as he is.

5. Be aware some students need only "a sounding board," whereby no decisions need to be reached. If you are a sincere listener, much confidence and trust can be established.

6. Take time to study the uniqueness of each student; be aware that a counseling approach which works with one, may not work with another.

Helping attitudes must be supported by helping skills. As a counselor of adults, hopefully, the following aids will help you become more effective in your counseling role:

1. Be knowledgeable of human behavior.

2. Be knowledgeable of the community and its social agencies for the purpose of making referrals.

3. Emphathize, not sympathize, with students of different backgrounds. Try to remain objective.

4. Follow through a problem logically until it is solved.

Be aware of good communication skills. In communicating you send messages in the following ways:

1. Verbally--simple language, spoken sincerely. Be "real" with you students.

2. Non-verbally--actions and reactions--how others read your actions and attitudes. Communicate in a positive manner, both verbally and behaviorally.

3. Listening skills--do not be passive--be active, attentive, and open-minded. Read the feelings behind the words (watch participant's posture, gestures, and facial expressions.) It often helps to rephrase a student's expression. This is a good test of your understanding what you hear and your ability to communicate your understanding back to the student. Allow the student to tell his problems in his own way. Ask straight-forward questions; with the purpose in mind to summarize, clarify, and confirm what you are hearing.

TEN COMMANDMENTS FOR EDUCATORS

1. Thou shalt never try to make another human being exactly like thyself; one is enough.

2. Thou shalt never judge a person's need, or refuse your consideration, solely because of the trouble he causes.

3. Thou shalt not blame heredity nor the environment in general; people can surmount their environments.

4. Thou shalt never give a person up as hopeless or cast him out.

5. Thou shalt try to help everyone become, on the one hand, sensitive and compassionate, and also tough-minded.

6. Thou shalt not steal from any person his rightful responsibilities for determining his own conduct and the consequences thereof.

7. Thou shalt honour anyone engaged in the pursuit of learning and serve well and extend the discipline of knowledge and skill about learning which is our common heritage.

8. Thou shalt have no universal remedies or expect miracles.

9. Thou shalt cherish a sense of humor which may save you from becoming shocked, depressed, or complacent.

10. Thou shalt remember the sacredness and dignity of thy calling, and, at the same time, "thou shalt not take thyself too seriously."

Policies Of The State Board Of Education For The Issuance Of A High School Equivalency Certificate

On The Basis Of The General Educational Development Tests

On June 11, 1965, the State Board of Education, by authority vested by the Legislature, authorized the Instruction Division of the State Department of Education to inaugurate a plan to enable those residents of Oklahoma who are eligible and have not completed their formal high school education to receive a Certificate Of High School Equivalency. The plan became effective September 1, 1965. Any person who has taken the GED Test prior to 1965 shall re-take the test.

DEFINITION

The Certificate Of High School Equivalency is a credential certifying that the holder has shown evidence of general educational development equivalent to a liberal high school education as revealed by scores made on the General Development Tests. The Certificate Of High School Equivalency cannot be exchanged for a high school diploma. It may be used to secure employment or an advancement in the job already held. Most Oklahoma institutions of higher learning accept the certificate for admission.

ELIGIBILITY

To be eligible to *take the GED examination*, a person must:

1. Be a resident of Oklahoma (must physically reside in Oklahoma at time of making application.)
2. Be 18 years of age or older.
3. Be 17 years of age and submit a notarized, written agreement between parent, guardian, or custodian and school administrator of the district in which the applicant resides.
4. Submit a recent photograph of the applicant

To be eligible to *receive a certificate*, a person must:

1. Have a minimum score of 40 on each of the five (5) tests with an overall standard score average of 45.
2. Have documentary evidence (letter from principal or transcript) showing their ninth (9th) grade class has graduated from high school if the person is 18 years of age. A 17 year old is *not* issued a certificate until their 18th birthday and they present proof that their ninth (9th) grade class has graduated from high school. The examinee must request the certificate when becoming eligible.

APPLY THROUGH ADULT LEARNING CENTERS

To become eligible to take the GED Test, an application must be made to the Adult/Community Education/Literacy Section of the State Department of Education through the local Adult Learning Center on forms provided by the Adult/Community Education/Literacy Section. The applicant must appear in person and present a recent photograph and evidence of residency in Oklahoma. (A valid Oklahoma drivers license will suffice for both.) Also a recent photograph must be attached to the application. A fee is charged by the testing agency in Oklahoma authorized to administer the test. The fee is payable by the applicant to the testing agency at the time the tests are taken. A fee of $5.00 will be charged by the Oklahoma State Department of Education for a duplicate GED Certificate and/or a duplicate transcript of GED scores. Payment will be in the form of a cashier's check or money order.

APPROVAL BY THE STATE DEPARTMENT OF EDUCATION

After the application has been received and approved by the Adult/Community Education/Literacy Section, the applicant will be sent a letter of authorization which he/she will present to the examiner in charge at the testing center selected by the applicant. A list of the testing centers in Oklahoma is enclosed. The applicant is responsible for making all arrangements with the testing center.

EXAMINATIONS

There are no dates set by the State Department for these examinations. Dates are set by the testing agency.

While most applicants make no special preparation before taking the GED Test, persons who wish to do so should review high school subject matter. Adult Learning Centers offer adult education classes at night for the purpose of helping applicants attain the educational background necessary to pass the tests. The local Adult Learning Center director will be able to provide information about textbooks and availability of adult education classes.

These tests will require approximately seven hours to complete. Applicants should plan on two half days to take the tests.

Scores from GED tests which were not authorized by the Adult/Community Education/Literacy Section of the State Department of Education will not be accepted. Exception is made for members of the Armed Forces, veterans, and foreign nationals who have taken the tests through the USAFI.

PROCEDURE FOR SECURING THE CERTIFICATE

At the conclusion of the examinations, the GED tests will be officially scored. If the applicant has qualified, he/she will be sent the Certificate of Equivalency.

RE-EXAMINATION

An applicant who fails to qualify for the certificate on his/her first attempt may be approved for a retest. At the time of retest the applicant should decide which of the five (5) tests to retest on and be aware that if they fail the retest, then they must wait six (6) months from the date of the retest before they may test again on **any** of the tests.

If a person does not finish all five (5) tests and should want to complete the tests at a later date and at a different center, he/she must retest on all five (5) tests.A different test battery will be taken on any retest or additional testing.

PUBLIC SCHOOL ADULT LEARNING CENTERS

Ada
Altus
Anadarko
Ardmore
Bartlesville
Chickasha
Clinton
Dept. of Corrections
Drumright
Duncan
Durant
Elk City
Enid
Guthrie
Guymon
Hugo
Idabel
Lawton
McAlester
Muskogee
Norman
Oklahoma City
Okmulgee
Pauls Valley
Pawhuska
Ponca City
Poteau
Pryor
Sallisaw
Shawnee
Stigler
Stillwater
Tahlequah
Talihina
Tulsa
Watonga
Wewoka
Wilburton
Woodward
Yukon

GED TESTING CENTER LOCATIONS

Ada
Altus
Alva
Anadarko
Ardmore
Bartlesville
Beaver
Bethany
Chickasha
Clinton
Dept. of Corrections
Drumright
Duncan
Durant
Edmond
Elk City
Enid
Goodwell
Guthrie
Hugo
Idabel
Lawton
McAlester
Miami
Midwest City
Muskogee
Norman
Oklahoma City
OKC Community College
Okmulgee
Pauls Valley
Pawhuska
Ponca City
Poteau
Pryor
Sallisaw
Shawnee
Stigler
Stillwater
Tahlequah
Talihina
Tonkawa
Tulsa
Tulsa Junior College
Watonga
Wewoka
Wilburton
Woodward
Yukon

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ADULT LEARNING CENTERS
1989-90

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405-332-6711

ALTUS A.L.C.--(Spanish)
Jerry R. Jacks, Director
Box 558
Altus, OK 73521-0558
405-482-0367

ANADARKO A.L.C.
Sherrill Neal, Director
1400 South Mission
Anadarko, OK 73005-5899
405-247-2486

ARDMORE A.L.C.
Helen Thompson, Director
Box 1709
Ardmore, OK 73402-1709
405-226-7650

BARTLESVILLE A.L.C.
Barbara Helmer, Director
636 SE Elmhurst
Bartlesville, OK 74006-8416
918-336-9302 or
918-336-4840 (after 3:30 p.m.)

CHICKASHA A.L.C.
Patricia Cunningham, Director
Chickasha Public Schools
Drawer A
Chickasha, OK 73023-0755
405-224-6848
405-224-6104

CLINTON A.L.C.
Gaylund Stone, Director
Box 729
Clinton, OK 73601-0729
405-323-1230

DEPT. OF CORRECTIONS
NE Quinn
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TEACHING TIPS FOR THE REVISED GED TESTS

The following teaching tips are excerpted from the Official GED Teacher's Guide, published by Contemporary Books, Inc. For further information on ordering the Guide, see p. 11, col.2.

Test One: Writing Skills

The inclusion of an essay section on the Writing Skills Test underscores the importance of teaching students to produce written communication. The following is a summary of the Guide's suggestions for teaching writing.

1. Take time to relive students' anxieties about writing. Many writing teachers have observed students' natural reluctance to write. The teacher's challenge is to overcome that reluctance by providing students with frequent opportunities to write about subjects in which students have a real interest. Ungraded freewriting and journals may be appropriate "loosening up" exercises in this case. A five-to-ten-minute freewriting period can be offered at the beginning of every class or writing session. This gives students an opportunity to begin writing thoughts and words without concern for "correctness" and thus makes the prospect of beginning a structured writing assignment less intimidating.

2. Stress that writing is a process and that revision is an inherent part of this process. This is a point that bears repeating to student, who often feel blocked from writing because they view it as a complete and perfect product.

3. Give frequent and varied writing assignments. Most writing teachers agree that students learn to write best when they write regularly. Writing assignments may vary in length and complexity; certainly it isn't necessary to require an essay in every assignment. Rather, teachers should try to transform many assignments into writing exercises of some sort, whether they involve writing lists, sentences, paragraphs, or longer pieces. The point is to help students grow familiar with the process of putting ideas into written form.

4. Design writing assignments so that they relate to students' interests. The best topics for writing are those that engage the students' interest and allow them to demonstrate their strengths as thinkers and writers. Though they require more effort from instructors, topics developed in consultation with individual students are often the best, especially if the topics demonstrate to the students how writing is useful in their lives.

5. Set reasonable objectives and use an incremental approach to building skills. Adult learners frequently feel insecure in the area of writing. And beginning writers typically make many errors--from confused organization to sentence or word-level errors--so it would be easy to overwhelm them with lists of errors to correct. Start focusing on one problem area at a time--e.g., staying on topic or using complete sentences.

6. Use the students' writing to teach specific skills. See the article on page 8 for ideas on writing across the curriculum.

7. Have students correct their own writing. Teachers should use the students' writing as source material for teaching skills from organization to sentence structure, but let the students do the correcting. When an instructor indicates in bright red ink how a detail should be made more specific or how a sentence fragment should be corrected, even if students are required to rewrite, all they learn is how to copy.

8. Choose or create drill materials that call upon students to use their own ideas and language.

9. Emphasize that the evaluation is another part of the total writing process. See The Official GED Teacher's Guide for a discussion of incremental and peer evaluation approaches to evaluating writing.

10. Prepare students for both parts of the Writing Skills Test. Because the multiple-choice section of the Writing Skills Test presents students with materials and language not their own and with some language issues they've not dealt with in their own writing, some care should be taken to acclimate students to this section. There are a number of effective methods teacher can use to do this. (Again, see The Official GED Teachers Guide.)

11. Prepare students to write in a test situation. While we understand the value of a process approach toward the teaching of writing, for success on the essay portion of the Writing Skills Test students must ultimately write on an assigned topic, under timed conditions, without assistance , and without the use of reference materials. As a last step before the test, it is important that students preparing to take the test become comfortable writing under similar conditions.

Test Two: Social Studies

For adult learners, the social studies are perhaps the most familiar and least threatening of the subjects included in the GED Tests. Adults come into contact with social studies issues daily by watching the news on television, reading newspapers and periodicals, or listening to the radio. Teachers are in a position to capitalize on students' familiarity with current events by reminding students that they have opinions on these issues, whether they concern the economy (taxes, wages, prices, foreign competition, and jobs) or politics (local, state, or national).

Most adults have a favorite topic in history, and the teacher can reinforce that enthusiasm and urge students to investigate the subject more deeply. Every adult has experienced personal growth and conflict, has values and beliefs, and enjoys personal relationships. This is also the stuff of social studies, and sensitive and sensible examination of these topics through reading, discussion, and writing can make for interesting learning and greater self-awareness. Many adults travel to work, and all are affected by the climate: these are jumping-off points for investigating geography. In short, the social studies comprise an integral part of every adult's daily life, and there are many avenues, materials, and methods from which a teacher can choose to teach or reinforce important skills and concepts. The following are a few suggestions.

1. Familiarize students with key interdisciplinary concepts. Certain concepts are key to an understanding of social studies, and many of these concepts involve an integration of the various content areas of history, geography, economics, political science, and the behavioral sciences. These are some examples of the integration of these concepts:

   - Economic growth or recession is influenced by the availability of human and natural resources as well as by social and political priorities (economics, geography, and political science).

   - Social values change over time and these changes are often reflected in the interpretation or creation of laws (behavioral sciences, history, and political science).

   - Individual rights and freedoms may be in conflict with issues concerning the general welfare; laws are made to regulate these conflicts (behavioral sciences, history, and political science).

   - The needs and priorities of society have an effect on the use and development of the natural environment (economics and geography).

2. Have students practice using information from various sources to answer questions and solve problems. It is important for students to identify main ideas in reading selections and to extract information from graphic materials, to write summaries, and to identify supporting arguments.

3. Make students aware of the terminology of critical thinking. Some of the most basic tools of critical thinking are the terms used to describe the processes. Students should become familiar with the terms, as a way of labeling the processes they use. These include main idea, illustration, summary, implication, inference, concept, fact, hypothesis, opinion, belief, bias, assumption, conclusion, supporting statement, cause, effect, values, documentation, logical fallacies, and generalization.

4. Familiarize students with the process of social studies investigation, including the following steps of:

   - stating the problem,
   - formulating a hypothesis,
   - collecting data,
   - analyzing data, and
   - drawing a conclusion.

Test Three: Science

Most of the recommendations for teaching social studies also apply to the teaching of science. And, as in teaching the social studies, an effective method for teaching science is to require students to examine information critically, not simply to translate it or comprehend it on a literal level. This can be accomplished by asking them to question the information they read, by isolating causes and effects, or by evaluating any conclusions that are suggested.

1. Foster the development of critical thinking by planning the structure of class discussions. An effective strategy is to begin a class discussion by introducing a problem or by asking an open-ended question on a topic that is familiar to the students.

2. Structure both oral and written question to require students to use higher-order skills. However, to design all questions in this way is to risk leaving some students behind. Begin with skills lower on the cognitive hierarchy and then build from that point. For example, the "who," "what," "when," and "where" type of questions address prior knowledge, recall, and, to some extent, comprehension. Questions that call for the use of information at higher cognitive levels include "how," "why," and "what if."

3. Have students construct their own graphs. Various graphics are presented on the Science Test, and students often find these difficult. One type of graphic with which students seem to have trouble is the simple line graph. One approach to teaching interpretation of the graph is to assign students the task of constructing graphs of their own. Their graphs can portray any number of relationships drawn from everyday experiences. For example, parents can plot the number of hours in a week that a child watches TV, students can plot the number of television viewing hours by day of the week, the number of hours spent studying by day of the week, certain expenses (heat or electricity, entertainment, transportation, gasoline, etc.) by week or month, etc.

4. Encourage general interest in science. While out-of-class assignments and class trips are generally impractical in adult education classes, students can be encouraged to view some of the many science programs on television, clip articles of interest from newspapers or magazines, or prepare a written summary of an article or program. Likewise, teachers can encourage students to make the trip on their own and to prepare a brief written summary of one aspect of the visit.

5. Use student interest in everyday topics to get them working with diagrams. Since diagrams and schematics may serve as sample GED items or as part of a stimulus, student can become familiar with reading diagrams in areas with which they are already familiar. Teachers can bring in diagrams concerning car repair, VCR hookup, or microwave oven operation to help students with issues ranging from the most literal interpretation to more complicated questions.

6. Familiarize students with the scientific method. Understanding the scientific method is key to many of the questions of the GED Tests. Students should be familiar with the following concepts: experiments, observation, hypothesis, conclusion, finding,and proof, and with the steps in the scientific method.

    a. Make an observation.
    b. State the problem in the form of a question.
    c. Formulate a hypothesis that would explain the facts of events.
    d. Design an experiment to test the hypothesis.
    e. Draw conclusions based on the experiment.

Test Four: Interpreting Literature and the Arts

As with any area of learning, the key to teaching literature is its demonstrated relevance to the reader. No exercises in literacy analysis could hope to engage the adult learner the rush of recognition when a poem is made meaningful or a short story reveals a theme that is close to a reader's heart. This aspect of literature is both a challenge and a benefit in teaching adult learners, who bring more years of experience to their reading than do their younger counterparts.

With this in mind, the following are some suggestions for presenting adult learners with a variety of literary types and for motivating them to read for deeper understanding.

1. Begin your study of fiction with prose since poetry and drama may intimidate the uninitiated. These selections should probably be short stories or novel excerpts since time is always a factor for adults. (With encouragement, a student may even read the entire story or book.)

2. Assign the reading of fiction outside of class and then have a group discussion using study questions. Such questions might include among others:

    - What is this story about?
    - Who tells the story?
    - What is the mood of the story? How does the writer create it (by word choice, sentence length, etc.)?
    - Where does the story occur? When? How does the reader know?

3. Teach fiction by examining conflict. Most conflict in fiction can be broken down to simple:

   - man vs. nature;
   - man vs. man;
   - man vs. God;
   - man vs. society;
   - man vs. himself; so some combination of these.

   With a greater understanding of obstacles, tension, and suspense, the class is ready to focus on the conflict of the story itself.

4. Tailor these approaches to small group discussions or writing assignments.

5. Demystify poetry for your students. to adults who are reading poetry for the first time, the approach should be simple. Poetry usually does one of three things:

   - conveys a message;
   - tells a story;
   - describes feeling, person, place, or thing.

   Poetry is also meant to be read aloud, and this should be done at least twice--at the beginning and at the end of study. What the poem will mean at first glance and what it means after close examination may seem completely different.

6. Select high interest nonfiction for your students.

7. Have student take parts and read from drama. Because the format is so different from prose, drama may at first seem difficult to read or teach. the icebreaker here is to have the students themselves take parts and read scenes or a one-act play together.

8. Help students realize that they are already familiar with commentary in movie, concert, and book reviews. Though commentary is the literary type that provokes the most anxiety, reading a movie review is something adults often do. commentary is thus best regarded in this way: students themselves are not to critique the fine arts, but to read what others have to say about a particular work of literature, film, theater, painting, music, or sculpture.

Test Five: Mathematics

The most important task teacher face as they help their students improve in mathematics is to relieve their anxieties about the subject of math. It is quite common for students at all ages, but particularly adults, to begin with an assumption that they cannot do math. This attitude often represents a powerful block to progress.

1. Stress the importance of the process of problem solving rather than the calculations involved. Examinees should be urged to recognize the math skills they already possess, especially their ability to estimate, and these skills should be called upon.

2. Encourage group problem-solving activities. Assign a problem or set of problems to a group of three to five students, taking care to assign the more capable student to different groups within the class. Students tend to be more willing to express their difficulties with the problems to each other than to the entire class, and they will readily accept--and truly learn--the ideas their peers suggests.

3. Provide opportunities for students to "visualize" problems. Ability at mathematics, of course, relates highly to the ability to perceive spatial relationships, and students will profit from practice at "visualizing" problems.

4. Stress the relevancy of mathematics to students' daily lives. Student will profit from seeing that mathematics is a skill that is relevant to their lives. Recipes, home improvement projects, budgets, taxes, salaries, daily expenses, costs of major purchases- all are situations adults face daily, and all involve the basic problem-solving skills require to succeed on the test.

5. Stress the connections present in mathematics. Regular reviews of concepts emphasize the continuity of the subject while they help build students' confidence about material they have learned.

6. Building on students' estimating skills. Besides encouraging students to estimate answers, teachers should urge students to ask themselves: "Is this answer reasonable? Does it make sense?

7. Have students practice separating necessary from extraneous information. Students should practice selecting only the data they need to answer a question or solve a particular problem and should be encouraged to make a chart to organize information.

8. Provide situations where not enough information is given to solve a problem. One the test, students need to determine whether there is not enough information to solve a problem. Teacher can present students with a mixture of problems that have both sufficient and insufficient information, and when a problem seems to have insufficient information, students can be asked to say or to write the information that would be needed to solve it.

9. Encourage multiple strategies for problem solving. About one-quarter of the problems on the GED Mathematics Test require students to focus on information needed or a process used to solve a problem, then encourage students to brainstorm and set up possible methods of solution.

Intended Learning Outcomes: Teaching Writing To Adults

Intended Learning Outcomes

After appropriate instruction, the adult student will be able to:

1. Write for different purposes and audiences using a variety and appropriate level of language.

   a. The student will be able to distinguish among various purposes of writing, such as to narrate, describe, explain, persuade, and to express self.

   b. The student will be able to identify the audience to which the piece is directed, such as: self, family, friends, teachers, employers other unknown or distant audiences.

   c. The student will be able to select the forms in which the piece will be written, such as: letters, reports, requests, memos, essays, excuses, complaints.

   d. The student will use the level of language which is appropriate to the purpose and the audience of the writing.

   e. The student will be able to write from self-chosen topics well as teacher-assigned topics.

2. Read, understand and accurately follow directions related to writing tasks.

   a. The student will be able to locate and understand the significant words in the task that direct the writer how to carry out the task.

3. Develop the content of the writing to demonstrate clear understanding of the purpose of the writing task.

   a. The student will be able to generate, select, and focus on ideas which will demonstrate understanding of the purpose of writing.

   b. The student will be able to use prewriting strategies such as talking, thinking, brainstorming, clustering, list-making, drawing on experiences.

4. Incorporate relevant, specific and appropriate information.

   a. The student will be able to identify and select relevant information from the pre-writing activity.

   b. The student will be able to generate additional appropriate information if/when necessary.

   c. The student will be able to use ideas gained from reading or viewing resources.

   d. The student will be able to use the Six Journalism Questions to generate ideas (Who, What, Where, When, Why, How).

5. Support ideas with specific reasons, examples, or details.

   a. The student will be able to write general main idea statements and support those statements with specific reasons, examples or details.

6. Organize writing logically and coherently.

   a. The student ill be able to select an appropriate method of organization n(such as chronological, sequential, cause-effect, compare-contrast, indictive, deductive, spatial, specific to general/general to specific classification).

   b. The student will be able to use an organizational framework that has an introduction, body, and conclusion.

   c. The student will be able to use transitional words and phrases to provide coherence and clarity to the writing.

7. Write using specific, clear, vivid, precise, and accurate language.

   a. The student will be able to expand vocabulary using the dictionary, thesaurus, and other references.

   b. The student will be able to vary vocabulary and avoid repetitions.

   c. The student will be able to use strong action verbs and specific nouns.

   d. The student will be able to use modifiers such as adjectives, adverbs, phrases, clauses.

   e. The student will be able to vary sentence structure by combining sentences, compounding sentences, contrasting sentences.

8. Demonstrate control of the Conventions of Standard Written English with few or no mechanical errors.

   a. The student will be able to use correct structure and syntax.

      1) Avoids run-on sentences
      2) Avoids sentence fragments
      3) Avoids subject/verb agreements errors
      4) Uses correct pronoun reference
      5) Varies sentence structure

   b. The student will be able to use correct word choice/usage.

      1) Uses concrete language
      2) Uses words accurately
      3) Uses idioms correctly
      4) Forms words correctly
      5) Understands connotation/denotation
      6) Uses appropriate level of language
      7) Uses adequate vocabulary
      8) Avoids unnecessary repetition
      9) Avoids clumsy usage

c. The student will be able to use correct mechanics: spelling, punctuation, capitalization, handwriting.

1) Spelling
   a. ie/ei
   b. adding suffixes
   c. reversals
   d. other

2) Punctuation
   a. end punctuation
      1. period
      2. questions mark
      3. exclamation point

   b. quotation marks

   c. apostrophes
      1. contraction
      2. possession

   d. commas
      1. series
      2. apposition
      3. compound sentence
      4. direct address
      5. quotations
      6. letter format

   e. other

9. Revise and did his/her own writing or the writing of peers in order to improve:

- logical development
- clarity and coherence
- word choice

so that it conveys the intended message to the reader.

a) The student will be able to revise and edit a piece of writing to determine that it meets the following criteria:

- understanding of task
- evidence of ideas
- organization
- support materials for ideas
- use of language
- use of the Conventions of Standard Written English

b) The student will be able to engage in peer conferencing as an aid to revision, e.g., Uses the PQP (Praise, Question, Polish) Revision Technique.

- submit the writing to a reading (peer or teacher)
- ask the reader to respond to the following questions:

What do you like best about my writing? (Praise)
What questions do you have about my writing? What is not clear? (Question)
What can I do to improve my writing? (Polish)

10. Use writing as a tool to process information and reinforce learning in all content areas.

a) The student will be able to use writing to
- gain information
- discover meaning
- understand logical relations
- make judgments
- communicate understanding
- formulate questions
- respond to reading

b) The student will be able to use writing for creative thinking and problem solving.

c) The student will be able to use writing to communicate
- emotion
- ideas
- opinions
- values
- experience

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More Writing Tips...

While free writing is important to the writing process, teachers should be reminded that it is not all important. Students also need to learn form, structure, and ways of organizing ideas. Formal writing can be done with a cross-circular approach, too. Students are assigned real subjects, based on their subject-matter studies. For example, they might be asked to "list and explain three causes of the Civil War" following a reading and discussion of that conflict. This kind of writing calls for a structured approach, starting with an outline, and the outline itself might be the idea generator.

Teachers could also assign topics such as these:

- Describe the process of photosynthesis
- Explain how the theory of supply and demand works in an economy.
- Explain and give examples of faulty pronoun reference.
- Describe the way you work out word problems in math.
- What are three ways for discovering word meanings? List them and illustrate how you would apply them to the word "liquify."

Writing across the curriculum programs characteristically take a process approach. That is, rather than assigning a writing and then taking up the final drafts to read and grade, a teacher might intervene at any stage in the process. First, the teacher is involved in idea exploration, assisting students in ways of discovering and uncovering ideas, engaging in a dialect that opens up the student's mind to new ways of looking at ordinary things. And the teacher helps the student to find new information that is rated first on content, then on form.

Listening to a paper being read aloud, students learn to respond positively and personally wherever possible. They look for purpose, audience, organization, and evidence. They should also be able to summarize the main point. to help the, students might be given directions such as these:

- In a sentence, summarize the writer's main idea.
- Name two things you liked about this piece of writing.
- Did you like the beginning? How could it be improved?
- Did the conclusion seem like a good finish?

Exerpted from *The Catalyst*, Arizona Adult Education newsletter, November 1987.

Preparing Your Students for the New GED Writing Skills Test

by Judith A. Brown
Washington Adult Center
Rockford, Illinois

Relax! The new essay portion of the 1988 GED Writing Skills Test doesn't need to raise your blood pressure, keep you awake at night, or foster ideas regarding a career change. Transitional suggestions such as those that follow may assist you as you endeavor to prepare yourself and your students for successful writing in the testing situation.

- Remember that change isn't always easy. But the challenges you accept and conquer give you a new appreciation of your potential and a deeper sense of confidence.
- Believe in yourself and in your ability to communicate the techniques and skills these changes demand.
- Suspend negative labeling regarding your students' ability to become knowledgeable, even fluent writers.
- Attend writing seminars, conferences, and in-service-training sessions with a positive, open mind. Seek to discover as many new ideas and approaches as possible.
- Experiment with others' suggestions. Evaluate! Retain what works; discard what is ineffective.
- Create your own patterns, methods, and materials, Bring your wisdom, your skills, your originality to the forefront. Don't imitate others. Be the best that you can be.
- Use cooperative learning. View yourself as a competent, skillful facilitator, remembering that both students and teacher and learning and teaching. (You don't have to have all the answers.)
- Focus on becoming a better writer yourself. Pay attention to your own writing process. Share your writing and your writing experiences with students.
- Establish a daily, directed writing period for students. Their skills will develop with practice. Once they realize how to generate ideas through processes such as clustering, they will anticipate the writing sessions. (Students do like to write! Believe that!)

Excerpted from *The Adult Educator*, the newsletter of the Northern Area Adult Education Service Center, Fall 1987.

Preparing for Test 2: Social Studies

by Joyce Downey

GED teachers should know that the revised GED Social Studies Test reflects the renewed emphases in the high curriculum (in the United States and Canada for their respective editions). And though there are no dramatic changes, the following will be useful in preparing students for the revised test:

- Remind your students of the basics, that Social Studies includes history: an interpretation of important events in our country and the world; geography: a study of the relationships between the natural environment and human activity; economics: a study of how people produce and use resources; political science: a study of governments, laws, and the process of using power; and, the behavioral sciences: a study of people as individuals, people in groups, and people in cultures.

- Inform your students that the Social Studies questions tend to emphasize how social studies issues and concepts are related to each other in real life--such as how political power relates to a country's natural and human resources: how a person's choice or a country's policy is affected by traditions, beliefs, and values; or how a problem in society is linked to its peoples' historical roots.

- Tell your students that many of the questions require the ability to apply, analyze, or evaluate issues, and more often these issues are global issues, issues that affect the United States and Canada and nations all over the world.

- Reassure your students that their own experience of working, being a consumer, belonging to a family, reading newspapers, news magazines, and human interest stories, and listening to radio and television broadcasts are important preparation for the GED Social Studies Test.

In addition to these four guidelines, your students need a foundation of knowledge in the Social Studies, and especially in history and political science. Teachers can suggest that students study any of a number of readable and informative basic texts in civics and U.S. or Canadian history at adult learning centers or libraries. Students can read on their own, at their own pace.

With the foundation laid, the teacher should conduct discussions of the concepts studied. (See Science Editor's tips on discussion in the March issue.) And of course, on interesting way to do this is to take a look at current events in history, politics, and social trends. GED teachers can also look to news magazines and newspapers for simple, effective exercises for their students.

I suggest that teachers use a simple model of instruction to help their students read and think more critically and to boost the students' confidence.

First, ask students to collect clippings or notes about a current event or issue that interest them. Have them find written material and a graphic, such as a chart, map, or cartoon.

Then help students identify the important information by posing the following questions:

- What are the main concepts or issues raised in this article?
- Who is speaking in the material?
- What is the author's point of view?
- What information supports the author's point of view? Do you detect a bias?

What additional information do you need to understand or accept the author's points?

Why or how are the main ideas or issues controversial? Does your experience and knowledge contradict or support what you read?

How do these concepts and issues affect real peoples' lives, especially your life?

How can lawmakers, citizens, consumers, businesses, community groups, families, and you use this information?

To support this method of instruction, teachers can collect a file of current-events articles and interesting graphics to use in class. The more the students practice the line of questioning suggested (which can be added to by the teacher and students), the greater success they will enjoy in their own critical reading and the GED Social Studies Test.

Joyce Downey is the Social studies Editor at GEDTS.

GED Science Instruction

Science is often given the least attention in GED preparatory classes because many instructors feel they lack sufficient background in the subject. Be assured, however, that the revised GED Science Test does not contain pure recall items, so memorization of word lists or definitions should not be the main concerns for both teachers and students. In fact, there is no official list of GED science topics from which all items must come. On the other hand, the Science Test does require the examinee to have some basic science knowledge.

Because the test requires the examinee to demonstrate an understanding of presented information and to a larger extent the ability to use this information in various ways, the instructor should familiarize students with the thinking skills that the test demands.

The following approaches should also help examinees prepare for the revised Science Test.

First, a group approach will stimulate discussion and cooperative learning. Usually in a group, members process and learn more because they reinforce learned facts. The group also provides an arena for members to share common experiences and to become more confident about themselves.

Next, it is helpful to introduce science-related articles form magazines or newspapers. Begin a discussion with questions that will enable the members to demonstrate an understanding of the information, such as asking them to state (or write down) the main idea of the article. Avoid using questions that can be answered with yes or no. Ask the group to list the facts presented in the article. Then continue with open-ended questions that examine the who, what, where, when, which, why, and how of the material. Slowly direct the questioning toward higher thinking skills by asking questions such as how the information could be used or applied to other situations; what conclusion could be made based on facts; what are the cause/effect relationships, if any; what information supports the conclusion; and what other types of questions arise from the material presented.

Keep the discussion on target by directing the flow of questioning. However, knowing that there are many ways to solve the same problem, respect the student who can reach the same conclusion by an alternative route of reasoning.

During discussions allow ample time for a student to answer each question. When a student is given more time to think, the answer is more complete in sentence structure and in intellectual complexity. Too often teacher do not wait long enough for a student response and answer their own questions. Or teachers may rephrase the question several ways before the student responds; both approaches merely frustrate the student.

An article announcing a scientific breakthrough or describing a scientific study to solve a particular problem can be used to familiarize students with the scientific method. Many publications (see box) have sections that describe science updates. Using such an article, you may wish to do the following:

- Ask the students to describe the problem addressed in the article.
- From the information provided, ask the students if the hypothesis that the study was based on can be stated.
- Describe the method(s) that the scientist used to explore the problem.

- List the results or data that were discovered from the methods used.
- State the conclusion that was reached.
- Discuss if there were sufficient data to substantiate a conclusion.
- List additional questions that could be addressed in a follow-up study.

Be aware that every scientific study needs to be compared to a controlled situation, an experiment should test one variable at a time, and that the test results should be used on a very large number of trials.

Regardless of the approaches you use, however, remember to begin slowly and give the students the support they need to build confidence in their own abilities.

GED Math Instruction: Meeting the 1988 Challenge

by Myrna Manly

With this article, we begin a series that will provide specific suggestions for helping students prepare for the 1988 GED Tests. Because math is particularly challenging for GED examinees, it deserves first priority.

The preliminary results of an analysis comparing the performance of GED examinees to that of high school seniors (GED Items, vol 4, #4) show that the 1988 GED Mathematics Test will be a major challenge for examinees. A comparable study in 1982 revealed similar results for the current tests, so the findings were not surprising; rather, they reiterate that mathematics instruction for GED candidates needs to be improved. Some suggestions for GED mathematics instruction follow.

Allow the use of calculators during instruction. This allows more class time for the study of mathematical processes, instead of the mechanics of computation. A study (Hembree & Dessart, 1986) shows that calculator use enhances the learning of problem-solving skills, the primary focus of the GED Tests. The students paper and pencil skills also improved with calculator use, even when these skills were tested without allowing calculators. Additionally, calculator use allows the student to proceed directly into real-life problems. Motivation is thereby increased, and the anxiety associated with math computation is reduced.

Introduce variables to represent simple relationships and continue to use abstract symbols at every opportunity. A symbolic representation of arithmetic topics provides the student with needed review at the same time that it introduces algebra. This approach helps students prepare for "set-up" items on the GED Mathematics Test. These items ask for the method of solution rather than the actual answer.

Concentrate instruction on realistic problems which can be solved using ratio and proportion strategies. The majority of everyday situations that demand the use of high school mathematic (and, therefore, the majority of GED items) can be solved using rate/ratio/proportion techniques. An example of how to incorporate these suggestions into your GED curriculum follows.

Begin instruction by challenging the students to figure the cost per unit of various items in the grocery store (e.g. cost per ounce or milliliter of juice). After dividing the total cost by the number of units in many specific examples, ask the students to generalize and symbolically represent what they did each time. This exercise introduces the use of variables. Next, expand the exercise into equations by showing how $r = c/n$ (price per unit equals total cost divided by number of units) is an algebraic transformation of the basic relationship, $c = nr$. This casual introduction to the use of variables and algebraic equations is not threatening to the student and provides the background needed to complete many of the algebra items on the test.

Give added meaning to fractions by introducing them as rates or division problems. For example, compare the value of various rates, including percents, by actually carrying out the division that they represent. Plot the results on the number lines as they occur and note similarities as well as differences in value. Use the occurrence of equal ratios to illustrate the law of proportionality.

By graphing direct proportions on a coordinate plane, an aspect of geometry can be introduced. For example, the relationship between distance and time of a car traveling 55 mph is formalized by $d = 55t$. After 1 hour, the distance traveled is 55 mi. this pint on the graph can be represented as (1, 55); after 3 hours it would be 3, 165) and so on. Plot these points, connect them, and use the resulting line to make predictions about other points in time.

Teaching that focuses on these fundamental relationships using real-life examples serves to build connections between units in arithmetic, algebra, and geometry. This emphasis impresses the students with the relevance of their study and also helps reduce the anxiety associated with the study of algebra and geometry.

Myrna Manly is the outgoing GED Math editor whose move to Los Angeles this month is both a personal and professional loss for GEDTS. Fortunately, though, in the next article of this series, Myrna has agreed to continue with more suggestions for GED math instruction.

Myrna Manly left the GED Testing Service for sunny California, but she has passed on a second installment on GED Math instruction.

The GED math instruction article in the November/December 1987 Items recommended that calculator use be integrated into GED mathematics instruction. Implicit in this recommendation is the mandate to use calculators properly and intelligently. The ability to estimate is the key ingredient that separates an intelligent calculator user from a mindless button pusher. We must, therefore, focus on developing estimation skills in our mathematics instruction.

Prerequisite: single-digit mathematics facts. Students must be able to quickly recall basic mathematics facts before they can estimate. In fact, whenever confronted with a single-digit operation one should do this mentally rather than with a calculator. Expand these single digit operations by showing the patterns that occur when dealing with powers of 10. For example, finding the difference of 600 - 200 is no more difficult than 6 - 2. Use similar examples such as 6 x 7 = 42, 60 x 7 = 420, 60 x 70 = 4200, and 56/8 = 7, 560/8 = 70, and 5600/800 = 70 to reveal that single-digit mental mathematics can be a very powerful tool.

Estimate, then calculate. Make estimation an integral part of every computation by determining the range of the answer before you begin the operation. "Where would the value of this answer fall? Would it be less than 1? Greater than 10? Less than 100?" are questions to ask before actually calculating the answer. To achieve more accurate estimations, use a rounding technique that requires both the single-digit skill mentioned above as well as sense of the range of the answer.

Round with a purpose. Rounding with a purpose in mind requires adjusting the numbers involved to be compatible enough so that you can do the operation mentally. The value you choose to round to is determined by the other number in the problem. for example, if 238 were to be divided by 59, it would be appropriate to estimate it as 240/60 = 4. Whereas if that same number 238 were to be divided by 51, one might do better using an estimate of 250/50 = 5. This rounding technique differs from the traditional method in that there is not one specific correct way to proceed: any way that works is acceptable. Fractions and decimals will also be rounded to familiar quantities for estimating. consider adding these numbers: 13/15 and 5/9. The fraction 13/15 is close to 1 and 4/9 is close to 1/2. One can therefore estimate the sum as being close to 1 1/2. Common fraction and decimal equivalents are also helpful to know when performing mental math. For example, if asked to find 18% of 147, being able to recognize that 18% is approximately 1/5 and using 150 rather than 147 makes this simple 1/5 x 150 = 30.

Test for reasonableness. Look at the answer in the context of the problem. Ask if it is reasonable. "Is 4 feet a reasonable height for a building? Would we expect a person to be 500 inches tall?" are questions that can be answered with common sense. Encourage students to use their innate common sense to acquire a number sense.

Practice, practice, practice. It is obvious that students need to build confidence in their number sense before they can be comfortable estimating. Practice is the means to that end. Take every chance develop this confidence deliberately by using repeated examples structured to show patterns. Analyze answers for their logical connection to the problem.

Upon reflection, we realize that estimating and common sense, combined with basic mathematical knowledge, are the critical elements needed for mathematical literacy in today's world of calculating machines. But is it true that these will be enough to pass the GED Test when calculators are not allowed? Yes, as long as the examinee also is aware of some mathematical applications and concepts. Item #14 in Practice Test BB is a good illustration to support this answer. The item has a sketch of a triangle in which two of the angels are labeled 37 and 67. the question asks, "How many degrees does the third angle measure?" and gives these alternatives

(1) 28
(2) 34
(3) 76
(4) 256
(5) Not enough information is given.

Examinees who are familiar with this concept know that the sum of the angles in a triangle is 180 and know that they must add the two values and then subtract their sum from 180. the examinee who is an estimator would round the values to 40 and 70, add them to get 110, subtract this sum from 180 to get 70, and choose #3 as the only possible correct answer--all without paper and pencil computation.

Items that can be solved like this, combined with the "set-up" items that do not require any calculation, make up 75% of the items on the published practice tests. This seems to be a sure indication that time spent learning to estimate will be doubly valuable--both as preparation for the GED Mathematics Test and for the big test itself: Real Life.

ASSESSMENT SUPPLEMENT FOR TEACHERS

Thinking Skills: Measuring More Than Recall

When you write test items, do you ask students to do more than just recall facts? Increasingly, educators and the public agree that we want students to do far more than regurgitate knowledge; we want them to use their knowledge productively. So it's a little discouraging to learn that in a recent study of over 300 teacher-developed paper and pencil tests (conducted within the Cleveland Public Schools), 90% of the test items measured recall.

Admittedly, getting beyond recall can be taught. How do we define higher level thinking skills and how do we pose questions or write test items to measure those skills once defined? Here are some simple suggestions that can make it easier.

One popular way to categorize higher order thinking skills involves six levels. After presenting students with new information, we can assess their ability to deal with that information in various ways:

First, we can ask if students can recall the information presented.

Second, we can ask if they comprehended or understood the information. If they can recount it in their own words, they probably understood it.

Third, we might ask if students can apply the information to a new problem situation. If they solve the problem successfully, they can use the information at their disposal.

Fourth, we can ask them to analyze or examine components of the information.

Fifth, students might be asked to combine, synthesize or assemble the information from two or more sources to draw a conclusion.

A finally, we might have students make some evaluative judgment about the information, expressing their opinions.

There are two possible ways to measure students' skill at each level: Teachers can make questions up, or they can rely on questions provided in instructional materials. Let's explore the second option first.

Analyzing Textbook Assessments

Do the textbooks you use include questions that take students beyond recall? What percentage of the questions posed represent each of the levels specified above? The only way to find out is to analyze the study questions posed in the text. Pick a random sample of three or four chapters of a social studies book, for example, and analyze the study questions. Here's an easy way to find the classification of any particular question:

If you can identify:	The question is testing:	Example
What students must remember	Recall	What is the electoral college?
What students must restate in other words	Comprehension	How does the electoral college work?
What information is to be used to solve the problem	Application	Predict what would happen if the electoral college were eliminated.
What is broken down into what parts	Analysis	Differentiate the various roles of the electoral college.
What two pieces of information are to be combined	Synthesis	How can the electoral college and the popular vote produce different results?
What students are to express an opinion about	Evaluation	In your opinion, should the electoral college be retained or abolished? Defend your choice.

To avoid confusion about the level of any question, remember that levels from application upward to analysis and beyond require recall and comprehension as a prerequisite. That is, if the students cannot recall the information and/or do not understand it, she or he will not be able to use it, analyze it, synthesize it or make a considered evaluative judgment. However, remember to understand that each of these higher levels requires some operation beyond just recalling or understanding.

In addition, remember that a key to fair assessment is to be sure that a good match exists between the levels of questioning used for instruction (i.e., in the text or during recitation) and for testing. For example, it would be grossly unfair to ask students merely to recall information during everyday instruction, then present them with a test demanding skills in synthesis and evaluation. We must teach what we test. This leads us to the issue of writing your own test items.

Teacher-Developed Questions

The questions that guide day-to-day recitation in class and that appear on teacher-developed tests and quizzes determine how students will perceive a teacher's expectations. If those questions tap higher order skills, they will give the message that the teacher values more than recall.

But writing such questions from scratch is far more difficult than recognizing them when they occur in a textbook. Right? Not necessarily. Questions that measure thinking skills are relatively easy to write, if we attend to one key part of the question: The verb or action word that describes the problem to the student. Try this simple plan:

If you want to measure:	Start the exercise with these key words:		Examples
Information recall	list describe define label repeat name	fill in identify what when who when	List the parts of speech.
Comprehension	paraphrase explain review match discuss	translate interpret how why	Explain what purpose the verb serves in a sentence.
Application	apply construct draw simulate sketch	employ restructure predict how	Write a sentence that includes a noun, a verb and direct object.
Analysis	classify dissect distinguish differentiate compare	contrast categorize separate breakdown subdivide	Break down this sentence into its components by diagramming it.
Synthesis	combine relate put together	integrate assemble collect	Combine what you know about good sentences and good paragraphs to write an essay on. . .
Evaluation	judge argu assess appraise decide defend	rate debate evaluate choose should	Evaluate this paragraph. Is it good? Why or why not?

In Summary

If you analyze tests you have developed in the past, you will gain some insight into your questions writing tendencies. What level of skills are you measuring? What level do you wish to measure? Try changing the key words in some of the recall questions and watch the level change. But remember, it's not fair (or valid) to teach at the recall level and test at higher levels--or vice versa. Levels of instruction and assessment must match.

Thinking Skills: Synthesis

According to Benjamin Bloom, whose taxonomy is used to classify GED Test items, synthesis is "the putting together of elements and part so as to form a whole." It is a skill that asks that an individual "draw upon elements from many sources and put these together into a structure or pattern not clearly there before." In the case of the essay--Writing Skills Test, Part II--this is precisely the process that should occur. Like the skill levels in the taxonomy, synthesis requires the prerequisite skills which appear "lower" in Bloom's taxonomy (i.e., knowledge, comprehension, application, and analysis. Each of these skills has been discussed in previous issues.)

You may also remember from a previous article that we promised to return to synthesis since it falls "above" analysis but "below" evaluation in Bloom's taxonomy. That is, in terms of Bloom's hierarchy of cognitive skills, synthesis is considered to be a higher, level skill than analysis and a prerequisite skill to evaluation. It should thus be noted that while the essay, strictly speaking, is the only part of the GED Tests which is classified as synthesis, this skill is integral to items classified as evaluation.

To illustrate how synthesis is essential to writing, let's review the essay topic presented in *The 1988 Tests of General Educational Development: A Preview*.

> "The automobile has certainly been responsible for many changes in the United States. Some of these changes have improved our lives and some have made life more difficult or unpleasant.
>
> Write a composition of about 200 words describing the effect of the automobile on modern life. You may describe the positive effects, the negative effects, or both. Be specific, and use examples to support your view."

To respond to this topic, a student must first have some knowledge about the automobile. Since GED essay topics are designed and field tested for accessibility, students should have little difficulty with the content of any essay topic.

Next, the student will need to comprehend the question. What am I asked in this essay topic? How could I restate the question in my own words? What should I focus on in this essay?

Now, the student must consider how to present that focus. First, the main idea must be stated. For example, "The effects of the automobile have been mostly positive." Then that idea should be developed. For example, the student may wish to state three ways in which the automobile has had a positive effect on our society. Having decided on three effects to present in the essay, the examinee must analyze the possible relationships of these effects in order to arrive at an organizational theme. For example, the automobile's positive effects could be discussed in some kind of chronological order, that is early time to represent. Or the examinee might wish to order positive effects from least important to most important, or from least to most financially advantageous, and so on. Finally, these three points should be supported by concrete examples which add substance to the student's opinion.

At this point, the student will have called upon several skills: knowledge of the subject and rules of grammar, mechanics, and usage; comprehension of the question; an analysis of the relationships of the effects of the automobile to be included in the essay; and the application of

rules of organization and grammar while actually writing the essay. Synthesis, as the definition above implies, comes in to play as the writer puts together the elements (ideas) to from a coherent whole (the essay).

Even evaluation is a skill implicitly employed as examinees make judgments about the value and clarity of their examples and details in supporting the essay's major theme. All of which is to say: though thinking skills are discussed as a hierarchy, these skills are not used in a set sequence, nor are they employed in isolation. Nowhere is that more apparent in the GED Tests than in the essay.

In fact, several national studies have linked poor writing in general to poor thinking skills. Understanding these thinking skills and how they are a part of the writing process will help our students to synthesize--to draw upon knowledge, understanding, analysis and evaluation, and to apply these skills to creative, written thought.

A Process Model for Improving Thinking Skills

As with the mastery of any skill, one point should be clear: to learn and improve thinking skills, student must engage in activities which require the use of these skills. A number of teaching methods or models have been proposed to help student gain experience and thereby improve their thinking skills. The process model described here is an adaptation of one strategy called the "Guided Design." (This model is described in "Strategies for Problem Solving" by Jerry K. Stonewater in New Directions for Teaching and Learning: Fostering Critical Thinking, Jossey-Bass Inc. Publishers, Number 3, 1980.)

The Process Model

The goal of this process is to get students involved in solving problems and exercises which require higher order thinking skills representative of the skills they will need to answer GED Test question. Depending on the size of the class and/or the teacher's preference, student work individually, in small groups (2 to 3), as a class, or a combination of these arrangements. The critical point is that every student must get actively involved.

The focus of the students' work and that of interactions among students and with the teacher are exercises constructed to require higher order thinking skills in relation to subject area knowledge. The process as guided by the teacher focuses on steps inherent in effective problem solving (e.g., identifying and clarifying the nature of the problem, identifying information needed, generating possible strategies and solutions, evaluating strategies and solutions, solving the problem, evaluating and checking the preferred solution). Each of the steps often qualifies as a small scale problem in and of itself.

Among the critical roles of the teacher is the task of identifying or constructing exercises which require both the various levels of thinking skills and appropriate subject area knowledge.

Roles of the Teacher

The roles of the teacher in this process can be described as: process planner, facilitator and consultant, and quality controller.

As process planner, the teacher is responsible for creating and assigning the exercises which serve as the focus for a learning activity. In addition to integrating thinking skills with appropriate content, good exercises must:

- be realistic problems students can relate to. Listen for common practical problems students encounter and structure your exercises around these problems.

- ask for student supplied answers or solutions. Multiple choice questions, while they provide for rapid scoring in a testing situation, simply do not work well for activities designed to foster thinking skills.

By studying the examples and definitions we've given in this series, as well as in other publications (e.g., The 1988 Tests of General Educational Development: A Preview, GED Testing Service), you should be able to create your own exercises or find appropriate ones in commercial materials. Creating your own exercises may not be as tedious and time-consuming as you might imagine. Magazines and newspapers are a rich source of stimulus material. Also, one good stimulus can often serve for multiple skill levels as well as content areas. We recommend that you create your own exercises because: 1) the best exercises are those which tap the interests and abilities of your students, and you know best what those interests and abilities are: and 2) by creating your own exercises, you enhance your ability to serve as facilitator and consultant.

As facilitator, the teacher must create a setting in which students will be comfortable sharing ideas. Starting students out on problems they can solve and giving students ample reinforcement for their successes helps to put students at ease. However, teachers must also help students develop positive and realistic attitudes about the difficult nature of higher order problem solving. Poor problem solvers often give up too quickly and need continual encouragement.

As facilitator, the teacher should ask leading questions which 1) help clarify the problem and 2) suggest possible strategies for solving the problem. (This process is beginning to sound a lot like the old Socratic method, isn't it?) When students are working individually or in small groups, the teacher should circulate and observe the process. When students need knowledge in a subject area, the teacher serves as consultant by providing or pointing the way to the relevant information. (Note that this is an example of how the process integrates the teaching of content and thinking skills.) If in observing the process it becomes clear that a particular piece of information (content) is needed or a particularly promising strategy emerges, the teacher may provide more information or ask a student or group to share the strategy with the class.

Circulating and observing are also required in the role of quality controller. In this role, the teacher redirects students who may be stuck or pursuing an unproductive or unrealistic approach. The teacher must also help students identity criteria for evaluating their strategies and solutions.

In summary, the process outlined here is one which requires students to become active learners. While the teacher is traditionally responsible for restructuring the learning environment, it is the learner who must participate in order to progress.

Evaluation Thinking Skills

As indicated in an earlier article, these four "levels" of thinking skills are used in constructing and classifying GED Test items. Both the current and revised GED Tests include items at these levels; the revised GED Tests, however (to be introduced in 1988), will include a larger proportion of items at the higher levels, particularly analysis and evaluation.

Readers familiar with Bloom's taxonomy (Taxonomy of Educational Objectives, Benjamin S. Bloom, ed., et. al., 1956), the basis for the thinking skill levels used in classifying GED Test items, will note that we haven't discussed the level of synthesis yet. (In Bloom's hierarchy, synthesis fall between analysis and evaluation.) Because the essay part of the 1988 Writing Skills test requires synthesis level skills, we will devote a later article to talking about synthesis level skills related to writing the essay.

For purposes of classifying GED Test questions, the definition of evaluation is: the ability to make judgments about the validity or accuracy of information or methods. Test questions at the evaluation level require the ability to:

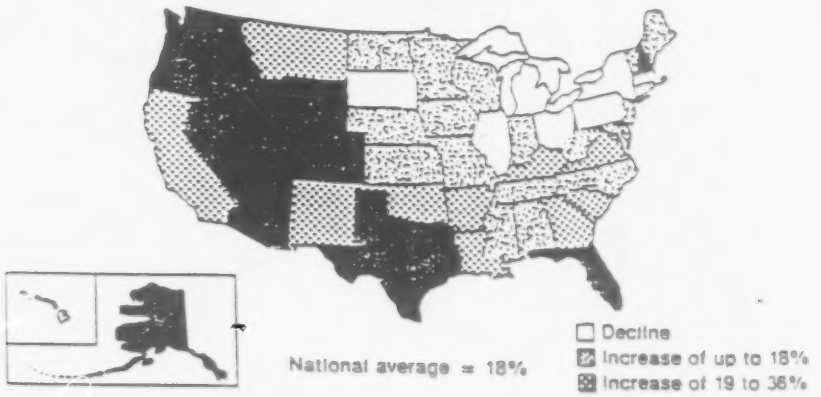
- assess the adequacy or appropriateness of data to substantiate hypotheses, conclusions, or generalizations,
- recognize the role that values play in beliefs and decision-making,
- assess the accuracy of facts as determined by documentation or proof, and/or
- indicate logical fallacies in arguments.

Here's an example from the Social Studies test which uses the map shown on this page:

Cognitive Level: Evaluation
Content Area: Political Science

Which of the following statements about Congress in the year 2000 is supported by data in the map?

Projected Change in State Populations, 1980 to 2000



SOURCE: Bureau of the Census

(1) Alaska may gain a senator.
(2) South Dakota may lose a senator.
(3) Illinois may gain a representative.
(4) New York may lose a representative.
(5) Congress may have fewer members.

This item is a particularly good example of how the higher skills require the lower skills; that is, to do evaluation, we must also have knowledge, comprehension, application, and analysis skills. Because state populations affect how many representatives each state has, but doesn't affect the number of senators, and because the population of New York is expected to decline, the answer is "New York may lose a representative." To arrive at that answer, we use the knowledge of where the states are located and the fact that population affects the number of representatives, but not the number of senators. Understanding the map's legend involves comprehension, while using the information from the map and our remembered facts about Congress are part of application. We also have to analyze the possible cause and effect relationships in order to see

how population changes might affect Congressional representation. Finally, we need to evaluate whether data in the map is appropriate to support the various statements given as alternative answers for the question.

This question is a tough one, in part because it requires such a high level skill. As with our other examples in this series, this example illustrates that knowledge alone in not sufficient to answer these higher level questions.

You may have noted that the graph used here is the same one we used for a comprehension level geography item in an earlier article (GED Items, Vol. 3, No. 3). We did this intentionally to illustrate that one stimulus can often serve as the basis for several content areas and cognitive levels. This is both a plus for teachers assembling materials and for students striving to integrate content and cognitive level instruction. Again, our hope is that by providing these examples, you will be better able to identify or construct exercises for use with your students. In a later article, we will discuss a process that, in combination with the right kinds of exercises, will help students improve their higher level skills.

Comprehension Thinking Skills

Generally, GED Test items are classified using an adaption of Bloom's taxonomy of educational objectives (Taxonomy of Educational Objectives, Benjamin S. Bloom, ed. et al., 1956). Bloom's taxonomy includes six levels: knowledge, comprehension, application, analysis, synthesis, and evaluation. The table below presents the percentage of items at various cognitive levels on the current and the revised GED Tests.

Percentage of Items

Cognitive Level	Current Tests	Revised Tests
Knowledge	15%	0%
Comprehension	55%	20%
Application	15%	30%
Analysis	10%	30%
Synthesis	0%	(see note 2)
Evaluation	5%	20%

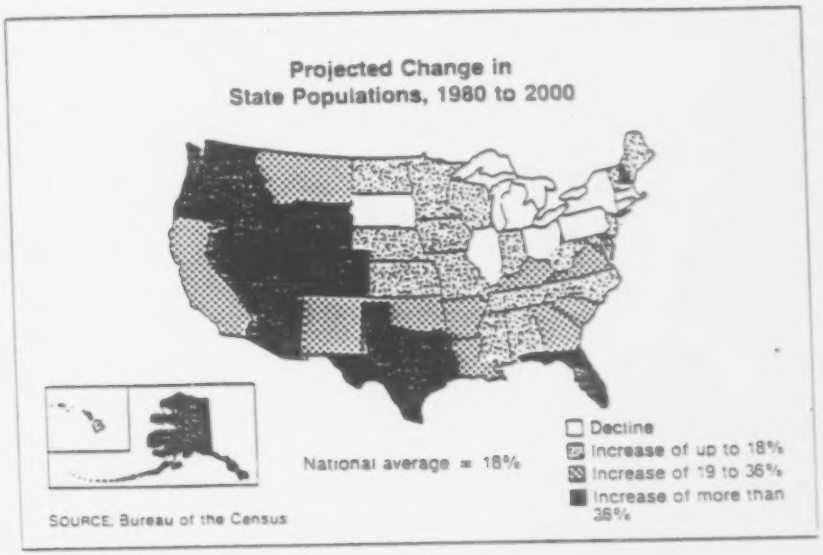
Notes:

1. The comparisons above are based primarily on specifications for Social Studies and Science Tests. However, the percentages are approximations for the battery as a whole

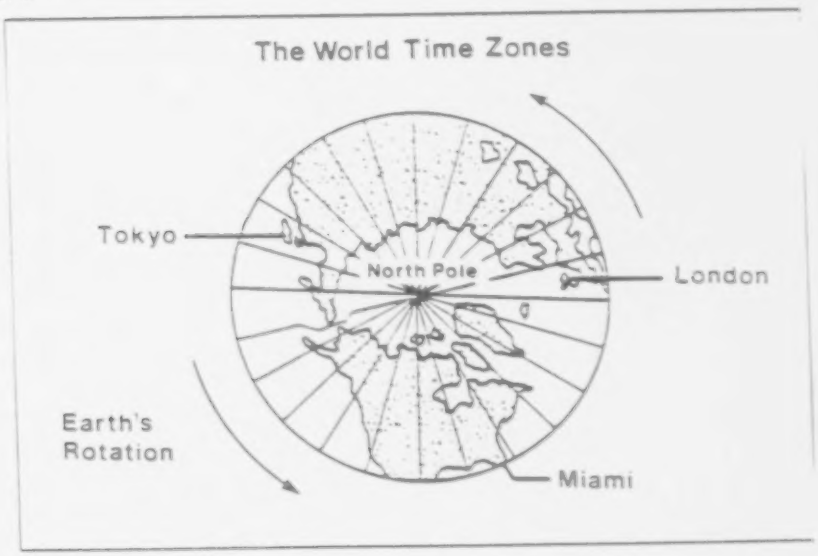
2. The essay topic which comprises part II of the revised Writing Skills GED Test is the only portion of the Tests classified as primarily synthesis.

The table above illustrates the shift in emphasis to higher cognitive skills in the revised GED Tests. However, it illustrates that the current Tests also include higher skill classification items. An important point related to the table is that the taxonomy is hierarchical. That is, lower level skills are prerequisite to performing higher order skills.

Graphic No. 1


Projected Change in
State Populations, 1980 to 2000
National average = 18%
Decline
Increase of up to 18%
Increase of 19 to 36%
Increase of more than 36%
SOURCE: Bureau of the Census

Graphic No. 2



Therefore, though the revised tests contain no items requiring knowledge only, obviously knowledge is required to answer higher level items (e.g., comprehension, application, analysis, and evaluation).

Generally, items classified at the comprehension level 1) require understanding the meaning and intent of written and graphic stimulus materials, 2) measure the ability to restate information, summarize ideas, and/or identify implications.

Item 1 is a comprehension item taken from Social Studies. It could readily appear on either the current or revised tests.

Cognitive Level: Comprehension
Content Area: Geography

Based on the map in Graphic #1, which of the following states is expected to have the largest percentage increase in population?

(1) New York
(2) Arizona
(3) California
(4) Illinois
(5) Georgia

This items is classified as comprehension because it requires reading and understanding the meaning of the map and legend and then identifying Arizona as the state (of those listed as alternatives) which has the largest projected growth according to the shading given in the legend.

The item also illustrates how comprehension skills are tested using graphic stimulus material.

Another important point mentioned earlier is illustrated by this item; i.e., that knowledge is prerequisite to being able to answer the item. In this item, the knowledge required is location of the states on a map of the U.S.

The next item is a comprehension item taken from the GED Science Test. It too could readily appear on the current or revised Science Test.

Cognitive Level: Comprehension
Content Area: Earth Science

The diagram in Graphic #2 represents the time zones in the Northern Hemisphere. A telephone operator places a call from Miami at 8 a.m., June 1st, to London. What time is it in London?

(1) 1 a.m.
(2) 1 p.m.
(3) 3 a.m.
(4) 3 p.m.
(5) 8 a.m.

This item is classified as comprehension because it requires the examinee to understand the following points from the graphic presentation: 1) due to the direction of the earth's rotation and London's location in relation to Miami, London passes through a time zone before Miami. 2) consequently, Miami time is earlier than London time; 3) there are 24 times zones; 4) each time zone is one hour ahead of the adjacent time zone to the west (clockwise on the graphic), and conversely, each time zone is one hour behind the adjacent time zone to the east (counter-clockwise on the graphic); 5) London is 5 times zones ahead of Miami; 6) consequently, the time in London is five hours later than in Miami, or 8 a.m. plus five hours is 1 p.m.

This item illustrates how even comprehension items can require multiple steps or putting several pieces of information together in order to solve the question. In this sense, comprehension items can range in difficulty from fairly easy to fairly difficult. Students should be exposed to exercises that require this sort of practice to improve their capability across all cognitive skill level item classifications.

Application Thinking Skills

The skill levels which we've adapted from Bloom's taxonomy for use in classifying GED Test items are presumed to be hierarchical in nature; that is, lower levels skills are needed to perform higher level skills. The lowest skill level (called knowledge) can be thought of as the ability to recall information. To say that skill levels are hierarchical is to say that the ability to recall certain pertinent information is required in order to do higher level skills. Even though the revised GED Tests have no items requiring solely knowledge level skills, certainly knowledge is required.

While the hierarchical nature of the skill levels might seem to suggest a sequential approach to instruction (i.e., teach the necessary knowledge and then worry about the higher thinking skills), complex humans, being what they are, seem to benefit from a more complicated approach. For example, research suggests that in learning to write (something that requires a fairly high level of thinking skills), students learn rules of grammar (knowledge) more readily and retain what they learn better when grammar is dealt with in the context of their own writing than when the rules of grammar are taught in isolation. Assuming that this phenomenon holds for other content areas (i.e., social studies, science, reading, math), it would seem to suggest that students should be engaged in higher order skill levels and taught the knowledge needed as it becomes necessary.

Application items require the ability to use information and ideas in a concrete situation. They measure the ability to use given or remembered ideas in a context other than that provided by the item stimulus. Here's an example:

> **Cognitive Level: Application**
> **Content Area: Physics**

Two factors influence the pressure in a gas-filled container: one is the temperature of the gas and the other is the amount of gas. If more gas is added or the temperature increases, the pressure inside increases.

> **If a truck is traveling on a hot summer day, what would happen to the air pressure in its tires?**

To answer this question, we must think of a tire as a gas-filled container. then we need to understand (knowledge and comprehension level skills) that the temperature inside the tires will rise because the day is hot and because the friction of the tires on the highway creates heat. Finally, we have to apply a principle given: if the temperature inside a gas-filled container increases, the pressure inside the tires.

Our cartoon shows that, taken to extremes, the principle applied in this item can cause a blowout! We included the cartoon here partly for comic relief, but also to suggest that simple stimulus materials can be the basis for a series of questions which get the students working on both content and thinking skills simultaneously.

Were this an actual GED Test multiple choice item, it would obviously have included five answer choices. We intentionally omitted answer choices in this example to make a point. When constructing questions and exercises for students' use, open ended tasks are better than multiple choice questions, because one aspect of improving thinking skills is being able to imagine possible outcomes or answers.

A recent conference participant gave us two quotable quotes. One was: "The hardest way to remember something is to just try to remember it." The other was: "The best way to learn something is to do it." In some sense, these quotes explain what we're trying to accomplish in this series on cognitive skills. The way we name the thinking skills, for the GED Tests or any other purpose, is of minor import, and trying to remember the names we use will help no one. But, if we can explain enough about the skill levels to help you get the students involved in doing them, then improvements will surely come in both their knowledge of the content and their ability to apply their thinking skills.